

# read me first



Simon Jary editor-in-chief

USB and FireWire are far more important than a couple of hundred extra megahertz registering on your Mac's beige dashboard

# Upgrade your mentality

he sad news that brave Mac-upgrade maker Newer Technology has ceased trading wasn't entirely unexpected. There's little point upgrading your Mac's processor nowadays, despite the proliferation of long-lasting older models. Don't get me wrong – if you own a pre-G3 Mac, you desperately need to upgrade. But the upgrade you really need is to a new computer, not a faster processor.

If you've got a Power Mac 7100, I salute you. If you've got a 6100, I'll take my hat off and eat it for you (the hat not the gravestone-sized original Power Mac). If your Mac doesn't even have a PowerPC chip in it, you're nuts. Running a Mac with one of Motorola's old 680x0 processors makes you the equivalent to those Japanese soldiers still holed up on a Pacific island believing the Second World War is still taking place.

Apple is happy to take another month's pay cheque from you to let you buy a new Mac. But it's a lot less chipper about you spending a fraction of that on one of those tempting G3/G4 upgrade cards that slot into your old Mac's motherboard as easily as adding new RAM. But, aside from issuing false warnings about how Mac OS 8 and above won't work in Macs running upgraded chips, Apple was powerless to see companies such as Newer, Sonnet and XLR8 grab that computer-upgrade cash from under its particularly put-out nose.

Processor upgrade cards offer us all the opportunity to stay at least close to the cutting edge. But getting there was always a tough decision — as upgrade cards were never cheap enough to persuade us all to join the movement. The phrase "For just a few hundred pounds more, I could buy a whole new Mac" came crashing into our consciousness every time we eyed up those mouthwatering chip-upgrade ads.

This is more true today than it's ever been. On January 1, Apple slashed the price of its 400MHz Power Mac G4 to just £899 (ex. VAT). A 400MHz G4 upgrade card costs a little over a third of that, but doesn't come with USB, FireWire, giant hard drive, RAM, keyboard or mouse. Newer's innovative G3 and G4 iMaxpowr cards also rocketed an iMac's performance, but there aren't many iMac owners who need such power. Even the original iMac's 233MHz G3 is fast enough for the majority of users.

I've nothing against processor upgrades. A year and a half ago, my home computer was a 200MHz 603e-based Power Computing PowerBase Macintosh clone souped-up with a 233MHz G3-chip Newer upgrade card. I then inherited one of *Macworld's* old 300MHz G3 Power Macs – not a giant leap in terms of performance, but it did at least have an Apple on the front and the processor it was born to run with.

That Apple logo is multicoloured, which should alert you to the fact that my Power Mac is decidedly beige—and not one of those blue-&-white models that were released when Steve Jobs let Apple designer Jonathan Ive out of his polycarbonate cage. The beige doesn't bother me. My home office is cream and brown, so it fits in rather nicely. Only the silver Hewlett-Packard DeskJet printer attracts the eye.

The colour inkjet is silver because it's a lot younger than my Power Mac. Today's generation of computer peripherals require a USB connection. And here's where upgrading does start to make sense. Sticking a 450MHz G4 chip into a 300MHz beige Power Mac might make me feel better, but it still leaves me bereft of the modern connections that most peripherals demand. I'd get the rush of an immediate performance boost. But that new USB/FireWire-equipped Power Mac is still a whole lot more today-compatible than my ADB/SCSI oldster.

The performance boost from adding to a G3's megahertz is negligible compared to the loss you suffer by not being able to update your printer or scanner, add a digital-camera card reader, or start making iMovies. The advances made by printer manufacturers are far more noticeable than even the difference between a 300MHz G3 and a 450MHz G4. A 7600 sporting a G4 is quite a different computer when it comes to speed. But without a USB connection, your ageing inkjet won't do justice to your Photoshop files.

While processor upgrades were almost always too expensive to bother with, cards that add USB or FireWire ports are casually affordable. I added Keyspan's £29 two-port USB card to bring my beige Mac up to date. £29! If you don't want to buy a gleaming new Mac, you should certainly consider adding one of these connection upgrades.

Upgrade makers will reap rewards with multiprocessing. I'm not suggesting you should plug a couple of G4s into a Power Mac 8600 – that would be like strapping a jet engine to a paper plane. But it certainly will be worth doing so to all those Blueberry G3s and Graphite G4s. As we have pointed out in recent issues of *Macworld*, multiprocessing will be compulsory when we finally make the move to Apple's next-generation operating system, Mac OS X – but not really before then. Multiprocessing upgrades were all the rage at this January's Macworld Expo in San Francisco.

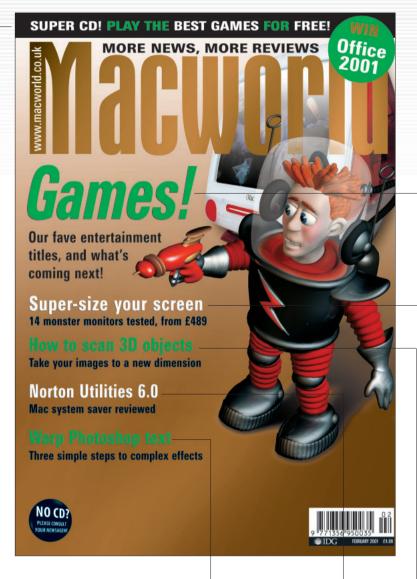
Newer's slogan was "Sometimes Newer is better than new". If the company had managed to hold on in time to sell multiprocessing cards to modern single-chip Mac owners, this may have been true. But when it came to 7100, 7500, and 8600 Power Macs, new rather than Newer was always the better option.

"Sticking a
450MHz G4
into a beige
Power Mac
might make me
feel better, but
it still leaves
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of modern
connections."

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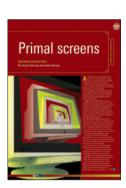
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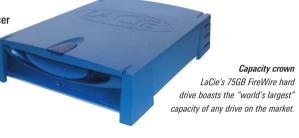
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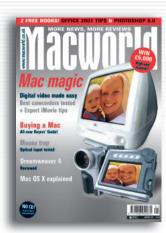


**BIAS Peak** Theme Park World

Virtual PC 4 69

Macworld FEBRUARY 2001

cc: Macworld letters cc: Macworld letters



### Subject: G4 sounds bad

Having read about the G4 Cube on your Web site in July, I rushed to pre-order one, and, in August, was among the first to receive one. My PC-owning friends were wowed by the Cube and particularly by iMovie - and how easy it is to use.

But I can't show-off the Cube's potential, because I'm unable to record a commentary over my iMovie. Neither can I show them my groovy voicerecognition password. Most frustratingly, though, I can't use an Internet phone or do Web-video conferencing. Why? Because I can't get any sound into my Cube.

The problem is that the Cube not only lacks a microphone, but also a microphone socket. I ditched my old SVGA monitor and stumped-up for a new 15-inch LCD Apple Studio Display – hoping this would cure my problem. Alas, still no microphone.

I've searched high and low for a USB microphone but can't find one. I've spent nearly £2,500 on a so-called state-

# Your Star Letter wins a copy of Office: 2001, worth £480

We reward the best reader letter with a copy of Microsoft's Office: 2001 for Mac. This integrated package includes enhanced versions of the market-leading Word, Excel and PowerPoint programs, as well as the new Entourage – a personal-information manager and email client.

Star Letter: It's a Macs world

computers and IT including Apricot, Wang, IBM

clones, Unix and Mac – and consider myself

something of an expert. A year ago, my husband's best

friend and his wife asked me what sort of computer they

PCs were best because of their "internal CD-RW drives".

you so." Still, what do I know? I'm only a girlie.

should buy. They'd never owned one before and wanted to

be online before their first grandchild was born. I told them all about the iMac – its ease and flexibility of use, and even took them to

see one in action. But what did they do? They opted for a PC-scanner-inkjet

- and this is the best bit - a male friend from their golf course told them

I have since had to visit this couple to help them learn how to browse

the Web, use their word processor and cope with jerky mouse movements.

The PC has no software to speak of. I have to bite my lip not to say "I told

or the past 15 years I have been working with

Write to Letters, Macworld, 99 Grav's Inn Road, London WC1X 8UT. Or email letters@macworld.co.uk



of-the-art computer – yet it doesn't perform even this basic function of a £600 bundled-PC. Alex Prout

MW Try MacAlly's iVoice USB microphone (£49.95 ex VAT; Macintosh Accessory Centre, 0191 296 1500)

# Subject: Web-domain mare

I am a Web-site designer and recently created a site for my wife's equestrian company, and in March registered a number of equestrian-related domain names to point at her main name, one of which was www.po-lo.com.

Recently, I received a letter from a firm of New York lawyers acting on behalf of Ralph Lauren, accusing me of being a cyber-squatter and demanding that I deregister www.po-lo.com name within 14 days or "face action that could lead to fines up to \$100,000". The company

has trademarked the generic "polo" because it is the name of one of its aftershaves. The advice of my solicitor is to deregister the name, because of the expense I would incur by fighting the case.

solution because

The Britishness in me makes me want to fight my corner, but what we really need is for a concerted media campaign to rectify this unfair situation. Keith Collingridge

# Subject: Nominated driver

I've forgotten how many times I've printed from my Epson inkjet and then tried to connect to the Web – only for my Mac to freeze. But hurrah! Epson has finally produced a printer driver that does not clash with Apple Remote Access. I've just downloaded it for my Epson ink-jet and, joy, it works. Philip Tyler

# Subject: Spare-parts misery

My 5400 Mac has been out of service for months. It's awaiting a spare part that has been out of stock at Apple for more than three months.

**Enquiries to Apple Customer** Services bring no comfort nor hope. I've since learned that there are 35 other Macintosh users awaiting the same part.

Office:mac

My Mac is not even four years old, so why are all parts not available off the shelf? And why is Apple seemingly oblivious to the hardship that having an unusable computer entails? Willie McIntyre

Subject: Get 'em young, Apple I am 15 years old and a new Macintosh user. I bought my iMac a few days ago, and am already a convert.

Unfortunately, my school doesn't see things the same way. The advantages of a Mac over PCs is even lost on our technology and electronicsdesign department. I've been able to improve my Web site (www.big-b.co.uk) ten-fold since buying my iMac. Logo design for one has been speeded-up by software such as AppleWorks and Flash for Mac. Even Microsoft software is good on a Mac. If Apple was to sell

cut-price Macs to schools then it would give birth to an army of converts who will go on to buy them in later life. Such an investment would surely reap rich rewards for Apple. Tom Morris

# Subject: Culture shock

I've just read a back-issue of the Times Doors magazine (October 22, page 55), in which there is an article by David Hewson entitled "A worm in the Apple". In it, Hewson damns the Mac platform. He even cites the old Wintel misnomer about PCs being faster than Macs because they have more MHz, and says "no companies bother to write software for the Macintosh platform any more". How socalled journalists can trot-out such ill-research garbage in a national newspaper amazes me. Tim Jarman

# Subject: Read me first

I read with interest Simon Jary's Read Me First column, "Supermarket sweet" in January's *Macworld*. All I can say is I hope Apple never follows his advice to go down the PC route and take its advertizing downmarket

The reason people buy Macs is because of their style. Macs will never be as big as PCs but by marketing them to a middleclass audience, at least Apple can tap into a market that wants to Think Different -

# Mac watch



Spotted a Mac in a weird place? Send us the evidence.

# Sims-patch plea

I enjoyed your round-up of funny The Sims customizers on the Letters pages in the January issue of Macworld. But where can I find these patches, and other information on this great Mac game?

■ There's an official Web site dedicated to Aspyr Media's The Sims game at http://thesims.ea.com/us/. You'll find game downloads, editing and customization tools, and demos. There's a chat room and exchange, where you'll find a growing collection of families - including albums, houses and a whole population of Sims, all created by fellow players. There's also a list of fans' unofficial sites - including 15 from the UK



even if this thinking different is nothing more than the snob value of good-looking machines. Mark Scott

# Subject: read me first

While well argued, Simon Jary's January column missed the point of Apple's marketing strategy. Apple is not PC World. Although giving more information in its ads might be a good idea, aiming its publicity at the average punter in the street will do Apple no good in the long run. Apple is not the Big Breakfast of computers, it's the Newsnight – and long may it stay that way. Steve, keep the ads slick. Adam Fraser

# Subject: The price is wrong

I recently came across a software and hardware invoice from 1994 and ended up not knowing whether to laugh or cry at the changes in price. Hardware prices are a staggering 175.5 per cent cheaper than they were, yet the technology is infinitely better.

Why then does software cost much the same? Although much-improved, surely there are also many millions more users around the world, which should have kept the cost-perunit down. Production costs have also dropped and

distribution is faster, thanks to CD and Internet postings.

Are we being ripped off, like we are when buying audio CDs? Ray Lancefield

# Subject: Boarder dispute

So Michael Prochak ("French nickers", January *Macworld*) believes the Web is "touted as a boarderless [sic] frontier". Does that mean it is not possible to find hotel accommodation or bed and breakfasts on it? Tony Watson

# Subject: Dock dismay

Having read again for the umpteenth time that the new Dock is just like the Windows Taskbar, isn't it fairer to say that the new Dock is just like the Apple Launcher? It operates much more like Launcher than a Taskbar. John Allan

# Subject: Hurrah for Windows

Am I the only Macintosh user who actually likes Microsoft Windows? I own a powerful AMD 500MHz PC, running Windows 98. However, earlier this year I bought a Blueberry 350MHz iMac, because I wanted easy Internet access, and my PC doesn't have a modem. While I agree that Mac OS is much better than Windows, I don't believe that Windows isn't

that bad. The majority of Mac fans are long-time users and are used to the Mac OS, so Windows is bound to seem clumsy. However, I know from listening to my PC friends that the reverse is also true. Caleh Towers

# Subject: Browser beaten

I installed the Netscape 6 Web browser from last month's cover CD, and immediately wished I hadn't. How can you offer such buggy software to your loyal readers. It's been nothing but trouble, and I'm even considering switching to Internet Explorer – a move to Microsoft I thought I'd never have to make. Please explain vourselves. Rachel Grieve

MW The version of Netscape 6 that we included on the January Macworld CD was the company's

finished version. We held off putting earlier "Preview" versions on the November and December 2000 CDs because we found them so buggy ourselves. Many readers requested that we put the so-called "finished" version of Netscape on our CD. We did point out inside the magazine that we found even this version "prone to crashes". For now, we recommend IE5 (also on our CD) for Web browsing. Microsoft's products for the Mac platform are rarely a

# **2001...** and all that

- 1 Napster releases a Mac version of its MP3-sharing software. Expect the subsequent lawsuit to lag six months behind its Windows counterpart. 2 Steve Jobs vows to have speedier CPUs in 2001. "510MHz or bust!" the
- 3 Hackers break into Microsoft's corporate network. After poking around the
- company's secret files, the hackers added insult to injury by fixing dozens of bugs in the Windows 2000 source code.

# Macworld

# FEBRUARY 2001 COVER CD

This month's cover CD features four stonking game demos plus 30-day trials of Macromedia Fireworks 4 and Extensis Preflight Pro 2, plus all the latest demos, utilities, shareware and updaters. Vic Lennard leads on...







Theme Park World demo

In Theme Park World you get to create and operate the most exciting, attractive and feature-packed amusement parks your imagination can conjure up. Pretty soon, you'll be in charge of a living, breathing and ever-growing world of your own.

The demo is a cut down version with only one of the four park themes, and you can only play in Instant Action mode. Many rides, sideshows, shops and features are missing as is the background music and online functionality.



# WaterRace demo

WaterRace is an offshore racing game with unique characters, levels and boats, each having their own technical characteristics. Mastering the different boats and levels is a real challenge.

The demo is limited to a single level with three boats. Practice level and network game are disabled. Requires a G3 with at least 6MB VRAM, and Mac OS 8.5.





# Heavy Metal F.A.K.K.2 demo

Take on the role of F.A.K.K.2 in this cuttingedge 3D-action game. Demo contains four levels, five weapons and six enemies. Requires a G3/ Rage Pro or better, 64MB RAM and Mac OS 8.6.





Championship Manager is an enhanced 2000/2001 season version of the realistic soccer management simulation game. The demo allows for play to the half-season mark. Needs a 120MHz PowerMac, Mac OS 8.0, and 32MB RAM.



# Preflight Pro 2.1.2 trial

Prevent wasted film, time and pre-press labour with Extensis Preflight Pro 2.1.2.

Inspect multiple files based on customizable output-profiles. Automation features include Watch Folders, creating Acrobat PDFs, running AppleScripts, and Imation OPEN support. Supports all major desktop publishing and imaging applications.

Trial is fully functional for 30 days.



# Fireworks 4 trial

Create, edit and animate Web graphics using a complete set of bitmap and vector tools. Use configurable export controls to optimize your images, give them advanced interactivity, and export them into Dreamweaver and other HTML-xediting environments. Launch and edit the graphics from inside Dreamweaver or Flash. Full 30-day trial.

# Cover CD FEBRUARY 2001

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

Acrobat Reader+Search 4

Install this version to be able to read many of the on-screen manuals

### ■ StuffIt & RealPlayer

Versions 5.5 and 6.0 of Stufflt Expander and DropStuff are included as is the installer for RealPlayer 8.

### System tools & ATM Lite

The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM Lite 4.6.1 (required for Suitcase 9).

### OuickTime 4 1 2

Some programs require QuickTime 4.1.2. This can be downloaded from www.apple.com/quicktime/download

# INSIDE MACWORLD



# **Desktop Magician 2.0**

Save/restore your complete desktop environment, including icons, windows, applications, documents, servers and monitor settings. Shareware.

# **KeyStrokes 2.0.1**

Provides a fully functional on-screen keyboard that you can use to type with the mouse anywhere you would use a normal keyboard. Shareware.

# Phrazer 1.0

Loop-based music composition tool. Loops are automatically tempomapped and pitch stretched so that everything stays synchronized. Demo.

### Reason 1.0

Classic music studio rack - samplers, analogue synths, mixers, drum machines, effects, and a realtime multi-track sequencer. Demo.

### WebShocker 2.2

Comprehensive Webanimation production tool. Integrated, streamlined environment that allows you to create, maintain and preview animations. Trial version.

# plus...

iView Multimedia 3.8.4 LiveSlideShow Plus demo OneApp Slide Show 5.6.5 Peak 2.53 demos



# **GraphicConverter 4.0.1**

Excellent graphic file format converter and manipulator. Many new features. Shareware.

# CD CATALOGUE





Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2001 - over 202,000 files! This will grow month by month to allow you to find any file you want, without

wearing out your CD-ROM drive. The latest version of DiskTracker (2.0.3)

is also included – don't forget to register if you find our library useful.

# **SERIOUS SOFTWARE** *includes*



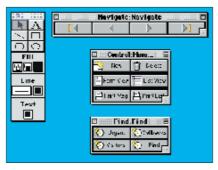


# **VSE Web Site Turbo 4.0**

VSE Web Site Turbo is a tool that strips unnecessary data

from HTML documents, resulting in size reductions averaging from 20 to 50 per cent based on content. It also optimizes JPEG and GIF images so that your Web pages load as fast as possible. The faster your Web site is displayed, the better will be visitors' impression of your Web site, company and product.

The unregistered demo version is fully functional, but mixes up the text on the optimized version of your Web pages so that you cannot publish them on your Web server. Of course, original Web pages remain unchanged.



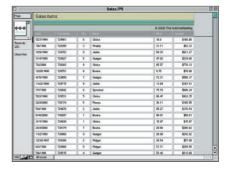


# 🙀 Pal-it! 1.1

StepUp Pal-it! is a FileMaker Pro developer tool. It gives the

developer the ability to create floating palette windows for FileMaker solutions. The palettes contain graphics that when pressed, execute a script in FileMaker files. Pal-it! also includes a built-in calendar palette window that enables a user to quickly enter dates into a FileMaker database field. The palette windows 'float' above all FileMaker windows and can be moved on the screen by the end user.

The package includes a number of demonstration files including 'navigate', 'control' and 'find'. Licence required for commercial solution distribution.





# Ranges Plug-in demo

The powerful Ranges Plug-in for FileMaker Pro uses a starting

date and an ending date to generate a range of values between those two dates. The Ranges plug-in will generate number ranges as well allowing developers to add dynamic range-based features to their FileMaker Pro solutions.

Features include the generation of dynamic on-screen data, financial or otherwise; the use of ranges in conjunction with Go To Related Records for quick report generation; integration of the included Calendar Solution into new or existing files: the ability to purchase a single licence and use it in an unlimited number of solutions.







# Cover CD FEBRUARY 2001

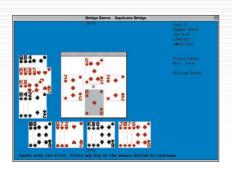
kelly crowley@macworld.co.uk. •If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email



FAULTY COVER CD-ROM? If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or email to

# DEMOS & GAMES ©









Vanessa Chess

# Bridge Baron 11 demo

GAMES WORLD 👁 👣

Recognized by bridge experts as the best computer bridge

game available. Beginners and experienced players alike can improve their bridge game by practising their skills against an alwayswilling opponent. If two or more people want to play, Bridge Baron can be set up to accommodate two, three or four human players – practise your partnership understandings or compete against one another.

Bridge Baron consists of seven programs in one: Play Bridge, Bridge Tournaments, Bridge Match, Conventions, Challenges, Deal Library, and Deal Generator.

The demo allows you to play 24 deals, try the graphical interface and look at the available options.

# **QuickShot Deluxe 2.03**

Test your reflexes, hand-eye co-ordination, and decision-

making skills. QuickShot Deluxe 2 provides a police-style simulation where threatening bad guys appear from behind cover. You must respond with accurately placed shots that dispose of the bad guys, making critical 'shoot or don't shoot' decisions. Some of the people that appear are innocent bystanders – recognize them or accept the consequences!

Breakable items that shatter and break when struck have been added, as well as bullet impact sounds that vary depending upon the type of object shot. There's even a replay feature at the end of each level!

Demo is limited to one standard level.

Other demos this month include 20th Century Aerial Joust (Tactical Air Combat Simulator) and the classic Puzzle Madness.

This month's Top 10 Shareware Games again offer variety. Arcaders will enjoy Droids 1.3, a great new version of the classic, and Space Debris 2.2, an asteroids-style game. There's also the latest versions of MacSnake and NetTower.

For those who like playing board games, the evergreen David's BackGammon 3.9.2 is joined by Vanessa Chess 2.0.1, one of the best chess games around. And Hakoiri-Musume 0.22, a Japanese puzzler similar to King of Parking, will keep you busy for ages!

Card gamers will definitely hit Klondike 7.6.2 and there's even a couple of word puzzle creators with Word Search 2.8.1 and WordsCrosser 1.3.5.

# ALSO ON THE CD





# COMMS & INTERNET

12 applications including: DupliMizer 1.6.3 HTML OptimizerPro 1.9.1 PageSpinner 3.0.2

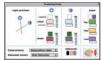
### FULLVATION

Italian Words & Phrases 1.0 Nuku 1.2.2

### FONTS

Four items including: FontCat1.3 SmoothType 2.2.2

# GRAPHICS



Seven items including: BackgroundWarper 2.0 PanoTools 2.2

OuickMovie 1.2

### ICONS & LITHLITIES Three items including:

iControl 1.2



1984 OnLine issue 30 ATPM 6.12 nlus two other items and eight developers' utilities

# **MATHS & SCIENCE**



Nine programs including. earthbrowser 1.3.5 Graphing Calculator 1.2 The Atomic Mac 4.5.0

Matrix Screensaver 2.0.1

# SOUND & MUSIC

12 programs including: ChordBook 2.3

### Sound Byte 1.8.3 SoundApp 2.7.3 Virtual Composer 2.6.8

11 categories comprising almost 60 useful tools for your Mac including: ARF Rename 3.4 AddressBook 4.2.5 Cliphoard Edit File Type Jig FinderPop 1.92 ImagePath XTension Mac Explorer 1.7 MI Convert 2.6.2 Palm Synch-n-Quit PandoCalendar 5.5.6 Pepper 3.5.2 OuickFinance 3.1 Ouick Text 3 0 Set Bleed XTension



StevePerfect 4.6.1

SunClock 1.2.2 SwitchRes 2.4.3 Thermograph 1.1.1 txt2ndf 4.2 Znippetizer 1.2.3

This month's dedicated undaters folder includes 60MB of patches to bring many popular applications bang up-to-date, including: Authorware 5.2 Packager Charts Pro 1 5 1 Cleaner 5.0.1 Corel KnockOut 1.5.1 Hermstedt ISDN CD 11-2 MacLinkPlusTrans 12.002 Norton AntiVirus 5-7 (12/00) Pluggo 2.1 Strata 3D 3.0.2 Virex (12/00) VirusBarrier Updater 1.1

# DON'T MISS...



Fortune Cookie

### ■ Cool Extras Fortune Cookie 2.1 -

The return of the noncrumbly Mac version by popular demand!

### Forest 13 -

Enjoy soothing nature sounds - listen and relax...

# Mac ISPs

Internet access offers from Abel gratis, AppleOnline and LineOne.

# ■ Netscape/Internet Explorer Complete packages for Netscape 6 and IE 5.

... many thanks to Simon Youngjohns for our CD icons.

# SHAREWARE



Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac





# **Macworld News** Apple to build CD-RW drives

# Hot Macs to burn CDs



pple is to bundle rewritable CD drives with select Macintosh models. This news emerged during a December conference call (see Business News, page34), in which a contrite Apple CEO Steve Jobs discussed Apple's falling hardware sales. Personal computer sales have slumped worldwide for all manufacturers (as well as software giant Microsoft), although media attention seems focused on Apple.

Apple's results have also been depressed by slower-than-expected sales of its G4 Cube and a badly timed reorganization of its education sales team in the US.

During the conference call, Jobs discussed another potential sales loser: "Apple completely missed the

"Apple completely missed the boat by not providing CD-RW drives with its Macs. We blew this. It will be fixed soon."

Steve Jobs, Apple CEO

boat by not providing CD-RW drives with its Macs", he said. "Apple ships none. We just blew this. It will be fixed soon"

Most Macs ship with read-only CD drives, though high-end models ship with DVD drives. The dual-processor Power Mac G4 500 includes a

built-in DVD-RAM writeable drive, but cannot write to CD-R (recordable) or CD-RW (rewritable) media; on top of this, DVD-RAM can't be read by many DVD drives. Most PC manufacturers,

> by contrast, offer read-only DVD as standard and CD-RW as a mid-range or high-end option.

"CD-ROM is being succeeded by recordable CD, rather than DVD in the

# DoubleTalk lets Macs talk with PCs Mar

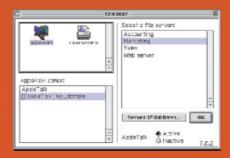
t a packed Macworld Expo in San Francisco, Connectix seized its chance to demonstrate DoubleTalk, a completely new networking solution. This is Connectix's first foray into the cross-platform networking solutions market which it now shares with Thursby Software, who's Dave (www.thursby.com) allows peer-topeer sharing between PCs and Macs.

DoubleTalk lets Macintosh users access Windows networks, enabling them to use Windows-based PostScript printers and exchange files painlessly with Windows PCs. It's a cross $platform\ network\ communications\ program-a$ Server Message Block (SMB) client for Mac OS.

# Side by side

The application has been developed as an easyto-use, easy-to-configure solution. It uses known Macintosh tools and techniques to provide access to network resources and services. It's capable of accessing Windows file-servers, and individual Windows workstations for peer-to-peer file sharing, and will access Windows-only PostScript printers. All Windows network services are accessible through the Chooser.

Once the application is installed and configured, and the Mac is logged-on to the network, all DoubleTalk's interactions are handled through the Chooser. Windows Domains and Workgroups appear in the AppleTalk Zones panel of the Chooser. Individual servers and shared volumes also appear in the 'Select a file server



panel of the Chooser (see above). Windows PostScript printers are also accessible here.

Once configured, hard drives, file servers, and printers all appear on the desktop in exactly the same way that Macs and Mac-compatible printers do. This makes it easy to navigate the network from the Mac; no Windows knowledge

DoubleTalk is compatible with all versions of Windows, so any PC network is accessible. The networking solution is slated to cost \$99.

Connectix claims DoubleTalk is capable of providing more print-queue information than is available in the Mac OS.

According to the company, DoubleTalk's builtin print-management mechanism is faster than

Connectix promises that DoubleTalk users will enjoy faster laser-printing throughput when the program is installed. DoubleTalk's minimum



Connectix Double Laik* Engin to NE Doubain		
DOUBLETALK DOUBLETALK		
Access DoubleTalk network volumes and printers as:		
Domain:	My_donisin	
Name:	Edward Reed	
Password:	*******	☐ Add to Keychain
(Afternospan )  (Thange Password Cancel Login		

system requirements include a PowerPC, Mac OS 8.1 or later, and 24MB of RAM.

Connectix also confirmed that it is working closely with Apple to produce a version of Virtual PC 4 carbonized for Mac OS X. The company does not plan on bringing the contentious Virtual Game Station PlayStation emulator to Mac OS X, as demand doesn't justify the port.

■ Thursby Software demonstrated a Mac OS X version of its popular Dave file-share software at Macworld Expo in San Francisco. Dave for Mac OS X is expected to be available within 90 days of Apple's formal release of the new operating



# into next Macs

short term," said Ray Freeman, facilitator of the Optical Storage Technology Association: "That's where Apple went off track. The market was not ready for DVD-recordable."

Freeman suggests that rather than offer CD-RW as a replacement for DVD-ROM, "what makes more sense is to offer a combination DVD/CD-RW drive that keeps Apple's (read-only) DVD capabilities and offers CD writing capabilities. However, the next clear step is DVD recordable and CD-RW in one device."

# ROM is wrong, rewrite

According to reports, Apple is investigating all of these options. One model reportedly under consideration, Pioneer's forthcoming DVR-A03, writes to CD-R, CD-RW, DVD-R and DVD-RW media. Media will cost around £34 for DVD-R disks and £19 to £25 for DVD-RW disks. Pioneer's drive will sell for less than £1.000 and is expected to ship to manufacturers in January and to consumers in April. said Pioneer DVD marketing manager Mike Mickes. "Pioneer has had interest from a variety of OEM customers," he added. Mickes would not reveal if Apple was one of these.

Both CD-R and CD-RW drives have become more popular as costs for the mechanisms and media have fallen. They are especially popular for recording audio CDs. IDC analysts estimate that sales of CD-R and CD-RW drives will soon overtake those of CD-ROM devices.

# **DVD** disparity

A caveat exists – recordable DVD technology is still in its early stages, with multiple, and often incompatible formats including DVD-R, DVD-RW, DVD-RW, DVD-RAM and DVD/CD-RW vying for success.

The DVD-RAM drive in Apple's Power Mac G4 500, manufactured by Panasonic, is ideally suited for video production "because of its ease of use and superior data quality," said Panasonic spokesman Andy Marken. However, the drive can write only to DVD-RAM media, not CD-R, CD-RW or any other writeable DVD flavour. Compounding this, many DVD drives can't read DVD-RAM, though the problem is being resolved as new DVD drives come to market. Any 12x-or-faster DVD drive can read DVD-RAM, Marken said.

The latest generation of DVD-RAM eliminated the disc cartridge, and increased capacity from 2.6GB to 4.7GB of data on each side. A retail ATAPI DVD-RAM drive costs about £500, and a 9.4GB disc without a cartridge costs about £30, down from near £55 this time last year. Manufacturers, including Compaq, have already put DVD-RAM on FireWire-enabled systems; they also offer CD-RW drives as options. Unlike CD-R media — which requires special software such as Adaptec Toast to record CDs — DVD-RAM media just shows up on the desktop.

DVD+RW, a DVD recordable format backed by Sony, Philips Electronics and Ricoh, is backward-compatible with all previous CD and DVD standards, but the format has languished for three years and no products are shipping. It is not expected to reach 4.7GB per

DVD/CD-RW
combination drives,
available now, combine inexpensive
DVD-ROM and CD-RW mechanisms.
Although they cannot write to DVD
media, Apple would likely be able
to support the technology with a
minimum of software development.
Some users have transplanted ATA
DVD/CD-RW drives from PCs to
Macs, using them with Apple's
CD/DVD driver.

**David Read** 

side until



As its Christmas rebates finished, Apple slashed retail prices on selected professional models. Apple has cut the price of the single-processor Power Mac G4 from £1,149 to just £899. The 450MHz G4 Cube also falls below the magic £1,000 barrier, cut from £1,249 to £999. PowerBooks and dual-processor Power Macs are also now considerably cheaper than last year. The consumer iMac and iBook prices remain untouched.

The 450MHz dual-processor G4 Power Mac (with 128MB of RAM and 30GB hard drive) is now £200 cheaper at £1,399. The 500MHz DP G4 (256MB RAM, 40GB hard drive) has had its price cut by £700 to £1,799. Server versions of the G4 Power Macs were also reduced in cost. The entry-level 400MHz PowerBook, which previously cost £1,699, was made £300 cheaper. The 500MHz PowerBook also saw a £300 price reduction, now costing £1,599. All prices exclude VAT. The price cuts preceded Apple's new-Mac announcements at Macworld Expo (www.macworld.co.uk/sf2001).

■ Apple is also offering UK customers a substantial discount (nearly £1,000) on the Adobe Design Collection, which includes Illustrator 9.0, Photoshop 6.0, InDesign 1.5 and Acrobat 4.0. Any customer purchasing a Power Macintosh G4, G4 Cube or PowerBook before March 31 can buy the Adobe Design Collection for £499 – a saving of £920 when compared to buying all four products separately. The offer applies to sales from the Apple Store and participating Apple Authorized Resellers, and must be bought at the same time as the computer. The Education deal is even better at just £279, when purchased with a Mac. MW





# Macworld News | Onnectix emulator updated

# QuickTime 5 Preview 2 drops Aqua elements



QT5 Preview 1: OS X controls

QT5 Preview 2: OS 9 controls

pple has posted version 2 of its QuickTime 5 Public Preview multimedia standard, this time for both Macs and Windows PCs. While there aren't many new features in QT5 PP2, Apple has listened to user feedback by removing the controversial Mac OS X elements from the OS 9 version

Users had voiced their annoyance that the amber minimize button doesn't work in Mac OS 9. The Red Close control and Green Maximize buttons did work – as they will in the forthcoming revamped operating system, OS X. The removal of QT5's Mac OS Xlike "traffic-light" buttons reflects a decision on Apple's part to maintain a consistent "look-&-feel" across its OS 9 products. The traffic lights will likely return when Mac OS X is released - the "minimize" button will then send the Player to the Dock

Preview 2 includes support for media skins, making it possible for QuickTime developers to distribute heavily customized interfaces. And despite losing the traffic-lights, the interface has been made sleeker, with the Player featuring an easy-to-use Favorites feature.

The Mac flavour of QuickTime Preview 2 also supports automated content creation, making use of QuickTime's AppleScript support. It offers improved MPEG-1 and SHOUTcast support with an improved DV codec for faster rendering. The SHOUTcast support lets QuickTime music fans playback MP3 audio files from the SHOUTcast site.

The second version has been optimized to provide the best possible streaming experience when combined with QuickTime Streaming Server 3. QT5 Preview 2 replaces older versions of QuickTime. Download it from www.apple.com/quicktime/preview.



QT5 Preview 2: for Windows

# Virtual PC 4 gets Windows on Mac



onnectix has released a new version of its Windows emulator for the Mac, Virtual PC 4. The program, which can be used to access Windows networks and run PC applications on the Mac, now supports the drag-&-dropping of text and data between Mac and Windows operating systems. The upgraded application features significant performance improvements, and a refined user interface, according

Virtual PC 4 integrates Velocity Engine support for G4 Power Macs. Additional memory (up to 512MB of RAM) can be allocated to the Windows operating system inside Virtual PC, without quitting the application. The Windows disk-image appears as a virtual hard disk on the Mac hard drive. Hunger for disk space has been eased, with Virtual PC 4 only using what disk space it requires, rather than a preset amount. This enables a number of different Windows operating systems to be run on the Mac's desktop - limited by the amount of RAM available to the Mac.

Connectix has developed a new, modular system called Virtual PC OS Packs. New operating systems can be added simply by copying the relevant emulator to the Mac's hard drive.

You can drag items from the Mac Finder to the window of any open operating system and vice versa.

Windows can also be resized for the first time.

Other interface improvements include scrollable windows, and support for three-button and scroll mice. Help has also been improved, with Virtual PC 4 – including a Virtual Disk Assistant, Setup Assistant and a more interactive Help menu.

Network support has also been boosted. The emulator offers full ethernet support, so Macintosh users running Virtual PC 4 can access PC network protocols to access servers, printers and PCs. Supported protocols include: Novell NetWare (IPX), Microsoft Networking (NetBEUI), Microsoft Remote Access Services (RAS), and Microsoft Virtual Private Networks (VPN).

# Windows of opportunity

Two versions of Virtual PC 4.0 (Computers Unlimited, 020 8358 5857) are currently available; a £75 upgrade version, and one with Windows 98 pre-installed (£159). PCDOS and Windows Me versions are promised soon, with supporting updates for other operating systems (including Linux) also in the pipeline.

Connectix is also ready for the release of Mac OS X, promising to release Virtual PC for Mac OS X shortly after the final version of Apple's operating system ships.

Review of Virtual PC 4, page 69





# Tiny Mac not as unupgradeable as first thought

# Cube minds the gap

ne of the criticisms of Apple's G4 Cube is its lack of upgrade potential. However, though Apple won't discuss it, the Cube, like any Mac, can be upgraded, and Mac vendors said they could offer CPU and video-card add-ons for the G4 Cube if there proved to be sufficient market demand. The hurdles have more to do with economics than technology. At least for now, vendors would have to make special versions of their upgrade products that fit inside the Cube, and would thus have to justify the extra expense of supporting an Apple model that accounts for a tiny percentage of the overall Mac market. See page 24 for upgrades announced at San Francisco's Macworld Expo.

The Cube includes most of the standard off-the-shelf components found in current desktop G4s.
However, these parts have been deftly adapted to the Cube's smaller space, and in doing so, Apple has deviated from the design standards defined for these components. For example, the Cube has a standard ATA connector for the hard drive, but only one hard drive can be connected because of the Cube's space considerations.

# **CPU** upgrades

The Cube's CPU sits on a daughtercard that plugs into the motherboard through the same connector used in current desktop G4s. Because it's an industry-standard connector that first saw use in PC laptops, it's readily available to upgrade vendors. And the Cube's CPU daughtercard doesn't use proprietary Apple ROMs, making it easier still to design compatible CPU upgrades.

"We don't see any technical barriers to upgrading the Cube," said Karl Seppala, director of marketing at Sonnet. "The most likely 'gotcha' is going to be the physical size."

However, he noted that there's currently no reason to offer CPU upgrades for the Cube because it sports the fastest G4 processors available. Sonnet generally offers an upgrade when it can double a Mac's performance for less than \$500 (about £350), he said. Another barrier is the relatively small number of Cubes that have been sold.

Working in the Cube's favour is its technical similarity to the desktop G4, which makes it theoretically possible to develop a single upgrade that works in desktop G4 and Cube models. This would widen the market and make a Cube upgrade more feasible, said Jack Kolk, general manager of XLR8.

Seppala agreed that it may be possible to offer upgrades that support both Cube and desktop G4s – even with multiple processors. "We will be looking at the Cube in one to two years based upon the state of the technology then," he said. However, he warned that heat or power-consumption issues could be barriers to such a universal design. "It is too early to tell now," he said.

One obstacle to such a "universal upgrade" would be the different heat sinks used in the Cube and desktop G4 systems. "Given the special thermal requirements in the G4 Cube, it is probably best to have a form factor that uses (the built-in) heat sink," said Chris Cooksey, director of engineering at XLR8.

# Video upgrades

The Cube shipped with a special version of ATI's Rage 128 graphics controller that plugs into its AGP slot. Buyers now have the option of substituting ATI's more-powerful Radeon as a £70 build-to-order (BTO) option from Apple. "All of our Cube Radeons are sold exclusively to Apple," said Deanna Perkins, public relations specialist for ATI. Apple, at least for now, won't offer the Radeon as an aftermarket option for customers who've already bought the Cube.

The retail version of the Radeon card includes a TV-out (composite and S-Video) port and DVI connector; the BTO version lacks TV-out and replaces DVI with the Apple Desktop Connector (ADC), which combines video, USB and power in one plug. The BTO version for the Cube is about a quarter-inch shorter than the standard version, and has a different metal bracket to fit the Cube's form factor.

Like other new Macs, the Cube employs a variation of the standard AGP connector, using a small black pin-block at the front of the connector to provide extra power for the ADC. However, standard AGP cards can still plug into the modified connector, though they would still need to be



A manufacturer could easily offer a video card for the Cube, but may not see much profit potential because of the limited market. However, the situation could change if vendors build cards that work in desktop G4s and the Cube. "Certainly, when we go to design a next-generation graphics card, we will design a form factor that accommodates as many Mac models as possible," Perkins said.

# Memory and storage

CPU and video-card upgrades may lie in the Cube's near future, but even now, you can easily boost the petite Mac's memory and disk storage. By default, the Cube ships with 64MB to 256MB of pre-installed RAM. The Cube's three DIMM sockets can each accept PC100 SDRAM DIMMs up to 512MB, accommodating total memory of 1.5GB. These are the same DIMMs used in Apple's other recent Macs. Adding memory can often provide a bigger performance boost than a faster CPU.

Higher-capacity replacements for the Cube's internal 20GB ATA drive are readily available. Users can also opt for an external FireWire hard drive.

David Read and Peter Cohen MW



Microsoft has
released a free
utility for Microsoft
Office 2001 users. Office
Manager 1.0 adds an
icon to the screen's top
menu bar. From here,
users can launch any
of Office's apps (Word,
Excel, PowerPoint and
Entourage), as well as
Internet Explorer. Any
other application can be
added to the drop-down
menu for quick launching
access.

www.microsoft.com/mac



# OS X big news in San Francisco

# OS X date 'set'



s Macworld goes to As Macworiu goes to press, reports claim that Apple has set February 24, 2001 as the release date for the full version of Mac OS X, its next-generation operating system.

Coincidentally, February 24 is the birthday of both Apple CEO Steve Jobs and Macworld editor-in-chief. Simon Jarv. It is also the final day of Macworld Expo/Tokyo.

Apple's official line before the event is that Mac OS X will ship in "early 2001".

It is claimed that Mac OS X has passed the 'feature complete' stage of development – all that remains is bug-removal and optimization. An update to OS X. code-named "Orient". is reported to be released within three to 12 months of OS X version 1.0's release.

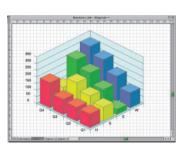
As part of a "massive" promotion, Apple is reportedly considering offering free OS X updates to those who purchase Macs at Expo or after. Plans to load OS X as the default OS on Apple's professionallevel systems are also being considered, according to anonymous sources. MW

Month with the ...
Conference and Expo month with the Macworld (www.macworldexpo.com) held in San Francisco, close to the company's Cupertino HO. The annual event took place at the Moscone Centre, January 9-12. It kicked off with a keynote speech from Apple CEO Steve Jobs, and broke attendance records, the organizers claim. Over 85,000 visitors enjoyed busy stands, seminars and workshops from nearly 500 exhibitors.

Software announcements were central for Apple during this year's event. In its recently released financial report to the US Securities and Exchange Commission, Apple admitted that Mac OS X needs thirdparty developers to 'carbonize' their applications in order to encourage adoption of its next-generation operating system. Carbonized versions of programs will run faster on OS X, as well as benefiting from its more modern features

Attendees heard a keynote speech from Kevin Browne, general manager of Microsoft's Mac Business Unit, who announced a series of new Microsoft initiatives (see www.macworld.co.uk/sf2001), but disappointed Mac gamers with no news on Microsoft's New York promise to port its games titles to the Mac.

At another keynote, Macromedia CEO Rob Burgess discussed the



# Odessa's Expo files

Odessa Systems announced and demonstrated ConceptDraw for Mac OS X. This a cross platform, technical and business drawing and illustration application. The Mac OS X version will be available as a free upgrade for all registered owners of ConceptDraw. The application will cost £99, and is also available online (www.concentdraw.com)

company's assault on the potential of what the Web can do, demonstrating a series of technologies the company has in development. In the opposite corner, Adobe demonstrated all its products, including Premiere 6.0. GoLive 5.0, Photoshop 6.0 and InDesign, at the show.

# X-po goes native

Corel took a stall at Expo to showcase its Mac products, sporting a number of updates to current products in its range, including a hybrid, PC/Mac version of Painter 6.1. Corel also launched CorelDraw 10 for the Mac, which will be Mac OS X native

The Canadian company demonstrated new versions of the applications purchased from MetaCreations last year, including Corel Bryce and Corel KnockOut running on OS X.

Corel will announce its new corporate strategy this month; and this open demonstration of Mac support ends speculation that the company would cease development for the platform.

Dantz has now carbonized Retrospect, its flagship back-up application, and previewed it for the Expo crowd. Dantz promises to ship the carbonized Retrospect when Mac OS X is released.

Active Concepts demonstrated Funnel Web, its award-winning site traffic-analysis and businessintelligence software, optimized to run on Mac OS X.

Asanté recently released Mac OS X Beta drivers for three popular products, including its AsantéFast 10/100 PCI card, it's GigaNIX Gigabit Ethernet Adaptor 1000 BaseT and the GigaNIC 1064SX PCI card.





**Griffin Technologies caused** a sensation with the first upgrade designed specifically for the Power Mac G4 Cube. CubePort is a card that replaces the internal modem with a single serial port.

Since the CuhePort connects directly to the Cube's motherboard via the internal modem slot, it offers Cube owners a quick-and-easy way to link up with a variety of printers and MIDI devices. The product is compatible with all Mac serial devices, as long as the peripheral's software is compatible with

Griffin also demonstrated FailSafe its server-restart device for desktop G4 Power Macs. FailSafe connects to the modem slot, and will restart a crashed server. The product can force a restart no matter how hard the crash, claims Griffin. It will also monitor user-selected applications for crashes.

The \$35 iMic USB audio adaptor (pictured above) from Griffin was also on show. Shipping now in the US, this includes audio-in and -output facilities and hosts a switch to select either line-level or Mic-level input devices. Non-USB microphones will work with

# X and Toast 5.0

Adaptec showed its PowerDomain 29160 SCSI card (left). Its subsidiary company Roxio showed its upgraded industry-standard CD-burning application Toast 5.0 for the first time.

Hewlett-Packard booked a 40-x-50-foot booth just beside the hall entrance. It showed a dozen products to the public for the first time, and announced the HP Laserlet 3200M its business-level professional colour printer. HP demonstrated all its recent printers, including the DeskJet 990Cxi



(see page 56), DeskJet 640 and HP Color LaserJet 4550N. Its digital cameras also took a bow, with Mac drivers freshly released for some models. HP's Mac-compatible camera range now includes the 315/315xi, the 618/618xi. 912/912xi and Photosmart series of cameras.

LaCie took the wrans off its photon18blue LCD 18-inch, flat-panel monitor, and demonstrated its SCSI and FireWire CD-RW 16x10x40x drives (see product news). Its entire family of FireWire-based 9.4GB DVD-RAM solutions (see page 56) and its TX12000 Ultra 160 RAID Tower system were also unveiled, along with its newly announced FireWire/USBconnectable PocketDrive CDRW and FireWire external hard drives.

Dazzle Multimedia showed its Hollywood DV-Bridge, which enables Macintosh users to canture older analogue video content, mix it with DV video, and edit and output it in either DV or analogue formats. This product has been designed to simplify the task of moving video content between camcorders, VCRs and Macs. The DV Bridge is a FireWire device, and will cost \$299 on its release in the US later this year.

# FX-po treats

Smaller vendors took exhibition space to showcase their solutions. Boris FX showed off Boris FX and Boris RED for Apple's Final Cut Pro. The company



Newtek demonstrated a Mac OS X-compatible preview version of its 3D modeller Lightwave 6.5. This version is fully optimized for the PowerPC G4 processor's built-in Velocity Engine, as well as QuickTime and OpenGL. The upgrade adds characteranimation tools and improved rendering to Lightwave's powerful suite of 3D modelling



also demonstrated its recently announced Graffiti resolutionindependent, 2D/3D title effects and animation plug-in application for video editing.

Alien Skin Software showed its Eye Candy 4000 product – a collection of 23 filters for Photoshop, ImageReady, Fireworks or Canvas. These filters include chrome, smoke, fire and wood effects for image creation and editing.

EMedia announced its eMedia Bass Method guitar teaching CD-ROM, the newest addition to its series of guitar-teaching products. The Bass Method CD features some tracks from its Guitar Method series, so student guitarists and bass guitarists can jam

Macworld Expo, San Francisco 2001 show news is also be available at www.macworld.co.uk/sf2001. Jonny Evans

# Fast, big and hot GBs

CE launched its Xcaret Pro 99 expansion-bay hard drives at Macworld Expo. The drives add between 6GB and 30GB of disk space to FireWire-enabled PowerBooks, and cost between £125 and £605. Xcaret Pro 99 drives require no software drivers and draw power from the host PowerBook. All configurations of the drive will respond to "Sleep" and "Spin Down" commands.

The drives are hot-pluggable, and MCE claims they are "high-performance devices" that are "faster than your internal hard drive". All ship with a one-year warranty. Mac Accessory Centre. 0191 296 1500

Macworld Expo daily news, galleries and reviews at www.macworld.co.uk/sf2001, updated throughout the day



# **Macworld News** Volume of high-speed devices favours Intel standard

# FireWire faces USB tidal wave

# Dr iMac



he University of Northumbria is issuing Jonathan Ive, Apple's London-born iMac designer. with an Honorary Doctorate of Civil Law

Ive, 33, is vice-president of industrial design at Apple, and graduated from Northumbria in 1989. He gained a First Class (Hons) degree in Design for Industry from Newcastle Polytechnic, Northumbria's predecessor. Ive achieved his fame with the awardwinning design of Apple's revolutionary iMac in 1998.

In May 1999 Vogue described the iMac as "one of spring's hottest fashion statements" Over two million iMacs were sold in the first year of production - when it collected various awards, including a Gold award from the Industrial **Designers Society and** 'Object of the Year' by The Face

pple may use USB to drive input devices, printers and other peripherals, but for faster hardware connections, it favours its own FireWire (IEEE 1394) technology over USB 2.0, the high-speed successor to the current USB 1.1 standard, Nevertheless, interviews with peripheral manufacturers suggest that Apple may have no choice but to offer USB 2.0 in its Mac systems.

"We think it would be surprising if Apple didn't adopt it at some point," said Ed Beeman, product line architect in Hewlett-Packard's Digital Imaging division. With many PC vendors jumping on the USB 2.0 bandwagon, "there's a lot of momentum to carry it forward," he said.

Like other vendors, Beeman expects to see a big wave of USB 2.0 peripherals in the second half of 2001. The first to appear will be hard drives, he said, because they are easily adapted to the new interface and stand to get a big performance benefit from USB 2.0's higher

"Scanners will follow shortly," he said, "then other kinds of HP products." HP plans to offer USB 2.0 printers, even though output devices tend to be limited by engine speed more than other factors.

Epson also sees summer or autumn 2001 as the coming-out party for USB 2.0, said Robert Ozankan, Epson's product manager for graphic arts and corporate scanners. "We'll be there with USB 2.0 products," he said.

However, he observed that FireWire currently offers better sustained throughput than USB 2.0, even though its top speed is 400 megabits/second (Mbps) compared with the latter's 480 Mbps. "It's not the maximum speed you can hit at once," he said. "The sustained throughput of FireWire is better for

high-bandwidth devices," such as film scanners or DV camcorders.

FireWire advocates also point to other benefits, such as its ability to operate without the presence of a computer, and forthcoming revisions that will increase speed to 800 Mbps, and then to 1,600 Mbps.

### **Numbers** count

USB 2.0's big advantage, HP's Beeman said, is that it enables development of high-speed peripherals at a low cost. USB devices already vastly outnumber FireWire products and he said it's relatively easy for vendors to modify USB 1.1 devices to support the new standard. Macs with the appropriate drivers will be able to use USB 2.0 peripherals, but only at USB 1.1's 12-Mbps throughput.

One company that's aggressively promoting USB 2.0 on the Mac is Orange Micro, which demonstrated several such products at the recent Fall Comdex 2000 trade show. Beeman believes that Orange Micro's strong advocacy for USB 2.0 might motivate Apple to take a closer look at the technology.

Minolta is betting on a big push for USB 2.0 in 2002, said Mickey Iwata, who works in its digital photography division in Japan. "We assume USB 2.0-ready PCs will become main sales items in Christmas 2001 at the earliest "he said. Even then, he expects the new interface to appear only in higher-end machines. So the company may offer a USB 2.0-compliant digital camera in spring 2002 at the earliest, he said.

High-speed interfaces are more important for scanners than digital cameras, he said, noting that some customers have "commented" on the slow USB 1.1 connection in Minolta's Dimage Scan Dual II film scanner. The company is considering FireWire because it's already established as a high-speed connection. When USB 2.0 becomes part of the standard PC chip set and the devices become more popular, "we will launch a USB 2.0 film scanner," he said.

Kodak is taking a "wait-and-see" approach, said Craig McGowan, product manager for software development at Kodak Digital & Applied Imaging. USB 1.1 has worked well in Kodak's still digital cameras, he said. As for USB 2.0, "we're not sure what the need is right now," he said.

One factor behind Kodak's ambivalence, McGowan said, is Apple's lack of support for USB 2.0. "If going to USB 2.0 means we'll lose our Mac customers for a negligible gain in the Windows market, we have to consider that carefully," he said. "We clearly value our Mac customers."

One solution, according to McGowan, would be to incorporate both high-speed standards into a single camera. However, Iomega's Redford believes that manufacturers will find this option too costly.

# **Speed selections**

Chuck Westfall, manager of technical information for Canon, believes that Apple will be putting its "head in the sand" if it chooses to support FireWire exclusively for high-speed hardware connections. "It has the option to go either way if it feels like it," he said.

One area where USB 2.0 is unlikely to have an impact is input devices. For example, Wacom's graphics tablets, which use serial and USB 1.1 interfaces, "already deliver more data to the computer than software can keep up with," said Wacom marketing director Scott Rawlings.

Epson's Ozankan noted that with USB 2.0 devices about a year away, there is still plenty of time for Apple to rethink its position. "I don't think it's anything Mac people have to worry about right now," he said. "Just something to keep their eye on." Joe LiPetri



# **Graphics card** shark soup Voodoo hexed as 3dfx sells out to Nvidia



# BT lavs claim to Web links

British Telecom has commenced legal action against US ISP Prodigy Communications. alleging copyright infringement on one of the World Wide Web's most common features. BT claims to own the patent for hyperlinks - the technology that allows users to click on embedded links in text or objects in order to jump to different pages or Web sites.

BT is seeking "appropriate reparations".

"This lawsuit is a blatant and shameless attempt by BT to capitalize on the initiative and

success of the pioneers of the Net," said Dan lannotti, legal counsel for Prodigy. BT claims its Hidden

Page patent (filed in the US in 1976) gives the company intellectual property rights to the hyperlink technology

"We realised the value of this one patent three years ago and have been reviewing which was the hest way forward " said RT spokesman Simon Gordon.

There are over two billion pages on the Web, each carries up to 100 hyperlinks.

raphics-accelerator giant 3dfx Interactive is to sell most of its assets to long-time competitor Nvidia in a cash/stock deal worth \$107.4 million. This decision has been forced on the company after several unsuccessful quarters. A 3dfx spokesperson explained that "high inventory expenses, decreasing margins and slowing demand have done irreparable harm to 3dfx".

The 3dfx sale is the first sign of a general shake-up in the graphics-card market. Industry rumour has it that Nvidia may already be contracted to supply graphics accelerators for Apple in future PowerBooks, in place of ATI's Rage 128 Pro.

Nvidia will take all 3dfx's graphics-related assets, patents, pending patents, trademarks, chip inventory. and brand names, including the best-selling Voodoo brand.

Nvidia co-founder and CEO Jen-Hsun Huang revealed that one of Nvidia's primary interests in the deal was to attract 3dfx's engineering staff. He expects the 3dfx purchase will help Nvidia get its products to market sooner and accelerate Nvidia's entry into new markets.

# Gigapixel grab

Last year 3dfx acquired Gigapixel, a developer of tile-based 3D-graphics rendering technology. Huang confirmed that Nvidia is interested in the technologies developed by Gigapixel, which boost the performance of high-end graphics processors without substantially increasing RAM requirements or chip complexity. Many graphics processing chips are more complex than the CPU's in today's Macs - and RAM is one of the largest costs for manufacturers.

While many details of the deal remain unresolved, Huang suggests it's possible Macintosh users will eventually see Voodoo-branded cards featuring Nvidia's own graphics technology. Huang said that 3dfx's Voodoo brand engenders great loyalty, especially among gamers. He hopes to boost Voodoo's market penetration in retail, raising it from 40 to 60 per cent. Specific details of how the technology will be integrated remain to be determined.

Steve Lapinsky, a senior vice president at 3dfx, confirmed that the company will dissolve its graphicscard business, though existing products will be supported through the warranty periods, he says.

Nvidia will incorporate 3dfx's technology, patents, and brands, Huang said. "We could just wrap the technology

# The race for graphics supremacy claims first victim

Graphics accelerators, such as 3dfx's Vondon card, make 3D-hased games (MacSoft's Driver shown here) really motor

into our own. The 3dfx brand could play a role; and we can call Voodoo our own." he added.

"We expect that Nvidia will continue the legacy that 3dfx began in 1994," said 3dfx CEO, Alex Leupp. "The combination of the two will result in even greater PC graphics leadership.

Stiff competition and price wars with companies such as ATI and Nyidia have taken their toll on 3dfx, which has seen large computer manufacturers switch alliances to competitors. Apple uses ATI solutions exclusively. 3dfx lost \$55.9 million in its third quarter of 2000, and its revenues have fallen by 63 per cent since 1999.

The acquisition leaves a vacuum in the Mac graphics marketplace, at least for now. Nvidia's technological competence remains untested in the Mac arena. So far, none of Nvidia's manufacturing partners have issued a Mac-friendly graphics card.

Nvidia is interested in the Macintosh Its GeForce2 MX a mainstream consumer-oriented graphics chip released last year, is the first product developed by Nvidia with Mac support built in. Since then, the company has also rolled out the GeForce2 Go – its first mobile chipset which also offers Mac support.

For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk), updated throughout the day

Huang promises Nvidia will make new product announcements this year, including a new, high-end graphics processor called NV20. Macintosh users are left to play the waiting game, watching to see if a Mac-friendly Nvidia licensee will launch a new, perhaps Voodoo-branded graphics card for them.

This wait could be short. As Macworld went to press, rumours reported that Nvidia may already be contracted to supply graphics accelerators for future PowerBooks. Visit www.macworld.co.uk/sf2001 for the latest updates and announcements from Macworld Expo, San Francisco, as Apple's PowerBook plans will not be announced until January 9 at the earliest.

Tom Mainelli, Brad Gibson, Peter Cohen

# Palm's future in hand

alm laid out its vision for handheld computing and announced several important technology plans and relationships at PalmSource 2000, its annual conference for hardware and software developers. Palm OS-based handheld computers can sync personal information with Macs and Windows PCs and download Internet pages.

The 3.000 developers, who make hardware add-ons, software and services for Palm handhelds, got a preview of forthcoming technologies, including a new version of the Palm operating system and a new slot for add-ons that will soon be standard on Palm products. Palm executives said planned moves to a new processor family and to higherresolution screens will not occur until next year.

PalmSource attendees took home a beta version of Palm OS 4.0, the next edition of the handheld's operating system. Improvements include richer colour, integrated support for telephony, and enhanced security.

Palm OS 4.0 is designed to enable rich, Palm OS-based telephony. Palm handhelds will be able to access most of the world's major wireless networks, including CDPD, CDMA, GSM, GPRS, PDC, and Mobitex.

The platform is supported by several leaders in mobile phones, including Nokia, Motorola, and Kvocera. In addition to these vendors, Palm CEO Carl Yankowski announced that Samsung was the latest licensee. Samsung is developing a new Palm OS-based smartphone for release in the first half of this year.

### Palm connects to ARM

Yankowski announced that Palm is taking its personal-information manager (PIM) to the Internet, leveraging the acquisition of AnyDay.com, and creating the MyPalm portal. The portal includes wireless email, online calendar synchronization, browsing, Web searching, and a rich array of online content and services, all sized for the handheld's screen. Existing email solutions will be extended to include message notification, and instant messaging.

Palm handhelds will also be enabled as passkeys and eventually as electronic wallets. Possible uses include repositories for a driver's licence, passport and credit cards.

Bill Maggs, Palm's chief technical officer confirmed plans to adopt a uniform slot for expansion cards in all future models.

Palm will also adopt a uniform base connector so that all future models will be able to use the same cradles, cables and external hardware modules.

Maggs also announced that future Palm handhelds will run on an ARM processor, delivering faster performance than today's Motorola Dragonball processor – allowing the devices to handle advanced applications, such as video conferencing. ARM-based Palms won't be ship to users, however, until 2002, when the company also plans to release version 5.0 of the Palm OS. The processor design was developed by Cambridge-based ARM Holding – of which Apple, until recently, held a significant stake.

Additional PalmSource conferences will be held in Europe and Asia Pacific this year.

# Ex-Apple boss' advice to Steve Jobs: merge

Apple's future could

be secured through a tactical merger with

the ON24 Web site: "Apple should look seriously at merging with a company like 3Com, which has a much more network-

He praised 3Com's wireless products, particularly the Palm handhelds, Palm OS and Internet radio solution Kerbango. Apple's vice president of worldwide

product marketing, Phil Schiller went on the record last May to put paid to rumours of the company working on a handheld device: "We are focused on the personal computer space, not the handheld space, and that's that. There's nothing going on.'

Sculley - the man who effectively sacked Apple's co-founder Steve Jobs back in 1985 - also voiced great respect for Jobs (now returned as Apple CEO) and his recent accomplishments: "If you combined Steve's extraordinary insight into industrial design and marketing with the network-centric know-how of 3Com, you might find a great future for them both"

# **Macworld News**

# Apple's design backed



recent IDC report confirms that the trend among PC A manufacturers to differentiate their products with unique design features continues. The report's findings were based on information gleaned from focus groups and surveys evaluating reactions to design innovation.

One crucial factor revealed by the report is the importance of colour and size to the success of PC sales. Distinctive exterior case shapes with design textures, surface finishes and colours establish brand image.

Apple caused a sensation in PC design when it launched its revolutionary iMac in 1998. This design ethic gave the company the confidence to launch the world's first coffeetable computer, the Power Macintosh G4 Cube.

"As demonstrated by the success of Apple's iMac, users seem receptive to new desktop PC designs," says Roger Kay, IDC's manager of desktop PC research. Apple's cutting-edge designs have forced the personal-computer market to consider the shape, design and colour of computers.

"Desktop PCs designed for the consumer market will need to pack a punch, while those for the corporate world will need to be understated and elegant," Kay says.

"Buyers now realize that a desktop PC may be defined more broadly than before. Consumers appear to be open to buying sometimes vastly different kinds of desktop designs," explained Kay. He believes design is key to a product's rise or fall: "We are at the start of major changes in desktop-PC design," Kay says. "It's critical that vendors understand user preferences to plan winning products."







# Make-or-break session at Digital Solutions show



# Learn PDF or 'lose your job' gamble



his year's Digital Solutions show takes place from January 30 to February 1 at London's Olympia. Apple will use the event to showcase its next-generation operating system, by staging Mac OS X briefings and demos throughout the three days.

The show, in its second year, concentrates on convergent publishing media – embracing design, print, Internet and creative publishing solutions.

A key will be digital-workflow standards, organizers have revealed. This follows the high level of interest shown in a session planned by the Acrobat Users Forum (AUF), called "PDF Includes Advertising". The organizers are extending similar invitations to other groups involved in developing digital solutions for print.

The meeting aims to kick-start the establishment of common digital-workflow standards for publishing and production to replace the current practices in those industries.

The PDF advertising session will discuss common digital-workflow standards for publishing and production to replace the existing "unsatisfactory" practices.

The session will debate pass4press, a set of digital advertising-transfer standards developed by the Periodical Publishers Association (PPA), the trade association of UK magazines and business-to-business media (www.ppa.co.uk). These standards have been developed to improve digital-workflow practices, from digitalfile transfer to proofing involved in digital advertising.

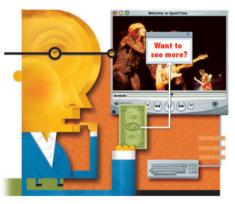
Will Pollard of the AUF said: "The PPA has just announced pass4press as a standard for digital advertising. Other groups have made announcements and the AUF has decided to support such initiatives. The time is right for everyone to get together and drive digital workflow forward."

# PDF or P45?

The organizers of Digital Solutions warn that ignorance of digital-workflow practices will drive up to 40 per cent of current print, production and creative businesses into insolvency within the next four years:

"These companies will go out of business. People will be unemployed, and, through lack of the right training, will become unemployable.

"Most of these businesses will be print-based, purely because the print sector as a whole seems reluctant to



# Pay per QT page view

et's say that rock concert everyone's been raving about becomes available online. You go to the Web to watch it through your QuickTime 5 Player. After a few minutes, the show stops. Pay a fee, and you can see the rest.

Welcome to the world of on-demand QuickTime content. brought to you by SealedMedia (www.sealedmedia.com). The company makes downloadable digital-rights-management software that lets Web publishers sell their online content to credit card-carrying surfers. And its product will be available as a plug-in for QuickTime 5.

"Web sites will run a movie for ten minutes and then they'll scramble it," says Alan Mutter, president and CEO of SealedMedia.

"If you like it and get hooked, you can buy it and watch it." The plug-in lets you buy content on a view-only or a permanent basis. "You download it once, and it's permanently plugged into your QuickTime Player," Mutter says. Adelia Cellini

invest in skills for the future," said Digital Solutions events director Russell Peacock.

"The tragedy is that all of this is easily preventable through investment in the workforce. It's no coincidence that the London Institute is running a conference alongside the show, addressing the impact of digital delivery on careers in creative, publishing and print sectors," he added.

The pass4press standards have been tested by a number of publishing houses and their suppliers, including Emap, IPC, BBC Worldwide, Conde Nast and The National Magazine Company.

Alongside Apple, the show will be host to industry heavyweights, Adobe and Quark. Adobe will demonstrate Premiere 6.0 and Photoshop 6.0. Quark will demonstrate QuarkWrapture and Digital Media Solutions (DMS), and sponsor a series of asset-management seminars. Macworld will also host a stand at the show.

Tickets for the show are free on the first day, as are pre-registered tickets; otherwise there's a charge of £10 per person. Admission to the seminars is free if places are booked in advance. Attendees are limited to three seminars apiece.

Digital Solutions attracted 5,670 visitors last year. Peacock said: "Last year we expected 5,000 visitors, and got 5,600. This year we expect an audience of up to 9,000."

For free entry and information updates, pre-register online at www.digitalsolutions2001.com. Digital Solutions, 01923 690 682





# Top PC games for Mac

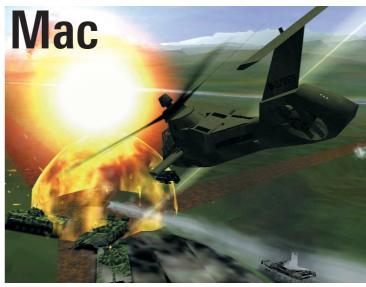
eral Interactive is to port two more titles to the Mac: F1
Championship Season 2000
and Enemy Engaged. Feral hopes to release Mac versions of the titles in April 2001.

Both titles were originally developed by Electronic Arts. F1 Championship Season 2000 has won critical acclaim – influential PC games-review site Gamespot.com calls it "one of the most detailed and visually spectacular Formula One racing games available for the PC."

The game features varying weather conditions and a driving-school mode. Its soundtrack hosts music from Fear Factory and

Headrillaz. Each make and model of car appears completely unique; a Ferrari stands apart clearly from a McLaren, for instance.

Enemy Engaged is the leading helicopter-combat simulation for PCs. It has quickly acquired an excellent reputation among PC gamers, who praise its compelling, realistic helicopter behaviours, excellent graphics and immersive game play. Gamespot awarded the title 9.0 points, saying: "The game sets a higher standard for how immersive a flight sim can be, while avoiding becoming mired in the technical minutiae of combat aviation."



### Chopper attack! (above)

Phewiiiieeeeh-thuk-kapooow!!! This enemy has been engaged, married, divorced and buried courtesy of Feral's Mac port of the lauded whirlybird-weapon game.

### And they're off (left)

Put the champagne on ice, and join Michael Schumaker and Jenson Button on the fastest race circuits of the world in F1 Championship Season 2000.

# Hasbro joins MacSoft co.

ame-publishing giant,
Infogrames Entertainment
has acquired Hasbro Interactive
in a \$100 million buy-out.
France-based Infogrames'
subsidiaries include MacSoft,
the popular publisher of Mac
games and software, and
Humongous Entertainment,
which publishes Mac titles for kids.



The deal has three principal elements. Infogrames takes control of Hasbro's catalogue of titles, including the Microprose and Atari brands. The company also gains the right to publish games based on current and future Hasbro properties, including Monopoly, Scrabble (see page 76) and Risk (pictured here). Infogrames has also acquired Games.com, an online gaming portal set to launch in early 2001.

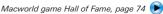
MacSoft announced a 13-title licensing deal with Hasbro at Macworld Expo, New York in July 2000. MacSoft has already bought Mac conversions of Hasbro games, such as Risk II, Wheel of Fortune and Jeopardy, with several more releases scheduled soon.

Bruno Bonnell, chairman and CEO of Infogrames, said: "Securing access to Hasbro's long list of properties fits our long-term publishing strategy to become the leader in family entertainment."

Titles available under terms of this deal include Microprose's Civilization series, Falcon and Atari titles – including Missile Command and the historic Pong, which pioneered the video game revolution. Infogrames may also develop and publish games based on Hasbro's cult Dungeons & Dragons game.

When launched, Games.com will enable visitors to play over 30 games online, including Monopoly and Scrabble; in addition, visitors will find news, information, tips and hints.

MW
Peter Cohen





# Mac Hexen 2

A team of Mac programmers
has ported Hexen 2 to the Mac.
The only snag is you have to have
a copy of the PC original to run it.
Three programmers (Brad Oliver,
Frank Condello and Frank Caldwell)
created a Mac-specific version
of Hexen 2 based on OpenGL.



The 3D fantasy slice-'em-up game was originally developed for the PC by Raven Software, but has never been released for the Mac. It's a fantasy-oriented romp, in which players choose from several character classes as they struggle to defeat the Serpent rider Eidolon and his minions. The game's combat is based on the original Quake engine.

Several different versions of the game are available for download, and *Macworld* will be carrying a three-level demo on next month's cover CD. A full version of the game is also available, as is a version that lets Macintosh users play the game's expansion pack, The Portal of Praevus. But both of these require the full PC game's data files in order to function.







# New-launch Apple warns of tough 2001

# **Business** briefs

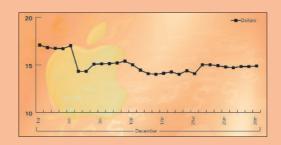
- Newer Technology, a major manufacturer of Macprocessor upgrades, has ceased trading and is to file for bankruptcy. Pioneering Newer was the first to ship G4 upgrades for 7300-9600 Power Macs, and G3 upgrades for the 6100, 7100 & 8100s. The company was also first to ship iMac G3 and G4 upgrades. On the portable side, Newer shipped the first Memory Cards for the Mac laptops, and the first colour PowerBook screen upgrade. Former Newer VP Roger Kasten is proud of the company's achievements: "Through it all we adhered to one simple premise: design and build products so that we would be happy if we bought them."
- Macromedia offshoot Shockwave.com and AtomFilms have inked a merger deal that the companies expect will create the world's leading next-generation entertainment company.
- MetaCreations has changed its name, and will now be known as Viewpoint.
- Microsoft has issued a profits warning - it expects to yield revenues of \$6.4-6.55 million - 5 to 6 per cent lower than predicted.
- UK lobbyists Privacy International and US data-protection groups EPIC and Junkbusters are suing Amazon for contravening UK data-protection laws.
- PC Data revealed figures that showed PC sales declined 12-15 per cent in November, compared with the same month last year.
- Sharp and semiconductor maker Mosel Vitelic are to form a company to design, manufacture and market LCD driver chips - essential in LCD monitor production.

pple has published its report (Form 10-K) for the financial year ended September 30, 2000. The company must publish the report within 90 days of financial year-end under laws administrated by the US Securities and Exchange Commission (SEC). The report reveals details of the challenges facing the company, and of Apple's future strategy. Apple also issued a profit warning in December - it will return its first financial loss in three years for the first fiscal quarter of 2001.

Due to slower-than-expected sales in October and November 2000, Apple expects to return a net loss, excluding investment gains, of around \$225 million, on revenue of around \$1 billion. This latest revenue estimate is \$600 million short of the revenues Apple forecast on October 18 on the release of its fourth-quarter results.

On the "megahertz gap" the SEC report reads: "The company has been informed by its suppliers that faster microprocessors will be available in sufficient quantity beginning in the first half of 2001. However, no assurance can be given that such faster microprocessors will actually be available, or be available in sufficient quantities. The inability of the company to obtain faster microprocessors in sufficient quantities during 2001 may have an adverse impact on the company's results."

Apple's report discusses the risk of launching Mac OS X. If the release is delayed, lacks third-party support or, worse



still, is not accepted by Apple's customers, then this could seriously affect Apple's business, the report says.

The financial team warns of a "significant sequential decline" in quarterly sales during the first quarter of fiscal 2001. It expects first-quarter net sales to fall to \$1 billion, as the company faces reduced demand, and pays out rebates to its customers.

"For all of 2001, the company anticipates net sales will decline compared to 2000, falling to about \$6.0-6.5 billion. The company expects it will be profitable during each of the last three-quarters of 2001".

Regarding Mac OS X and other - unannounced – new product launches, the report warns: "The success of new product introductions is dependent on a number of factors, including market acceptance, the company's ability to manage the risks associated with product transitions, the availability of application software for new products, the effective management of inventory levels in line with anticipated product demand, the availability of products in appropriate quantities to meet anticipated demand, and the risk that new products may have quality or other defects in the early stages of introduction."

# Adobe switches heads

dobe has named Bruce Chizen as CEO.  $oldsymbol{\mathsf{A}}$  Former CEO John Warnock will take the new post of chief technology officer. The company has also returned record revenues - up 25 per cent from last year. In the fourth quarter of 2000 it pulled in \$355.2 million, compared to \$281.8 million the same time in 1999. The company has increased its revenue for six consecutive quarters.

In fiscal year 2000, Adobe achieved revenues of \$1,266 billion, compared to \$1,015 billion in 1999. The company had a net income of \$287.8 million during the year.

Warnock said: "This has been a phenomenal year. Based on every measure, Adobe today is in the best position in its history, and much of that success is due to Bruce's leadership.

'With this in mind, the time is right for me to turn the CEO position over to him," Warnock added.



Bruce Chizen, Adobe CEO



John Warnock, Adobe CTO

# PC price war

The company predicts a price war in the PC industry, as manufacturers aggressively reduce prices to stimulate hardware sales, and warns against the negative effects of fluctuating exchange rates – particularly on manufacturers trying to slash margins in a depressed market.

Despite this, operating income totalled \$522 million – a 31 per cent rise against 1999's figures. The company increased its net sales - compared to 1999 - by 30 per cent, enjoying a 32 per cent rise in Mac unit sales. Sales reached \$7.983 billion on quantities of 4.55 million Macs.

The company shifted 2.2 million iMacs in 2000, up 400,000 units or 22 per cent over sales in 1999. It sold 545,000 iBooks - earning \$809 million from them. iMac and iBook sales combined accounted for 60 per cent of unit sales in 2000. Apple sold 1.3 million Power Macs, a 3 per cent climb year-on-year. 383,000 PowerBooks left Apple's warehouses. In Europe, net sales revenues increased 38 per cent during 2000, driven by a 53 per cent increase in Mac unit sales in the territory. This rise, however, was eclipsed by the 57 per cent increase in net sale revenues in the Japanese market, where unit sales increased 39 per cent.

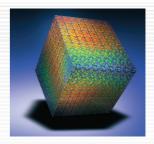
Research and development expenses totalled \$380 million, up 21 per cent from 1999 – advertising expenses also rose \$73 million, reaching \$281 million in 2000.

The company closed the year with \$4.027 billion in cash, cash equivalents and short-term investments; a 25 per cent increase (\$801 million) over 1999.

# news talk

The truth has finally caught up with Intel, as its brand-new processor shows up MHz ratings for the sham that they are.

# By John Welch



# Pentium 4 problems

or some time now, the Macintosh community has been in a state over the lack of clock-speed improvements in the PowerPC G4. It generally goes like this: "We know the G4 is faster than the Pentium III, but it looks bad, and besides, what happens when the Pentium 4 comes out and is running at 1.4GHz or faster?"

Intel has finally released the Pentium 4, and so far, the results have been disappointing. Unless you're running Quake III or have the two pieces of software that have been rewritten for the Pentium 4's SIMD extensions, you'll see almost no improvement over a Pentium III. This is great news for AMD, as the Athlon is easily beating the Pentium 4 at similar clock speeds.

But this is even better news for Apple and Motorola. If you read the reviews, the reasons why the Pentium 4 offers no real reason to upgrade can be laid squarely at Intel's "clock speed is all" philosophy.

Aside from some SIMD enhancements – Intel's AltiVec-like extensions—the Pentium 4 improvements are only in the area of allowing for faster clock speeds. And Intel's SIMD implementation appears inferior to Motorola's, perhaps due to the latter's extensive experience as a maker of digital signal-processing chips. As with AltiVec, you won't see a performance improvement unless the application is specifically recoded for the SIMD units.

What Intel did was double the pipeline size and add some execution-caching steps and other improvements related to clock speed. This is all neat, but it relies on much-faster clock speeds, and proprietary RAMBUS memory to work.

Even in many tests where the Pentium 4 beats the Pentium III or Athlon, the difference is 5 per cent or less at the same clock speed. This is not the amazing performance boost that the Pentium 4 is supposed to have. Now Intel says that we'll see a speed increase when the Pentium 4 hits 2GHz. But I would have hoped that doubling the clock speed actually gave you something.

# The Pentium trade-off

What do you pay for when you put clock speed over everything else? Remember that engineering is a balancing act, and there's a cost for every gain. The trick is to have enough gain to outweigh the costs. Has Intel done this? By many real-world measures, the answer is "No."

First, Intel's Pentium 4 has different power requirements, which necessitate new power supplies.

This is a minor annoyance for me, since I save money by buying new machines rather than using CPU upgrades, but for a home user, it's another expense to consider. Second, the Pentium 4 dissipates a lot of power: 55 watts, compared with a maximum of six watts for the latest version of Motorola's G4. As a result, the heat sinks are big enough that Intel is specifying motherboard attachments so they don't damage the chips, which has happened with some of the larger heat sinks on the Athlons. This means new motherboards, and new cases for most. So the upgrade path to a Pentium 4 is essentially a new computer.

### The noise factor

But here's another heat-related issue: Noise. Due to the fans needed to cool most Pentium IIIs and Athlons, the systems generate something like 55 to 60 decibels (dB), similar to heavy traffic noise. Multiply that by the number of computers in an area with cubicles. This is not a minor point – some of these boxes sound like DC-3s taking off. In contrast, the Cube, iMac and even a G4 tower are much quieter, almost silent. Even the fan on the G4 tower's power supply is quiet compared to the three or so fans in a Pentium III box. A constant 60dB noise level for eight hours a day, every day, is not a good way to work, and with the Pentium 4, it won't get any better. (An interesting ad campaign: "The Cube, because it won't make you deaf.")

For the first time, rigid focus on clock speed is burning Intel. Will the Pentium IV flop? Hardly, because Intel is too pervasive for that. But people are finally saying, "Why do I need this?" They are tired of spending money every six months for speed gains that don't show up in daily use.

I type my articles in BBEdit on a 400MHz PowerBook G3. I've done a couple on a 500MHz G4 at work. Other than BBEdit's slightly improved launch speed, I'm not working any faster at 500MHz than I am at 400MHz. I won't ever type fast enough to bog down a modern processor.

Does Motorola need to get the G4 running faster? Certainly. Mac users as a group hammer their machines harder than typical Wintel users. But I am more impressed with "faster" done correctly, and as part of an overall improvement, rather than a goal unto itself. There is much more to a computer than clock speed, and this truth has finally caught up with Intel. I hope the naysayers are watching.

"People are tired of spending money every six months for speed gains that don't show up in daily use"







# Wet and wild Mac-only racer

rench Touch has announced WaterRace, its Mac-only speed-boat racing game. It's the first high-speed, arcade-style offshore-racing game for the platform and features unique characters, levels, and ships - each with different attributes.

WaterRace has nine levels, three difficulty settings, nine craft and nine animated 3D characters. The game is network-ready for up to eight players over a local area network (LAN) on TCP/IP.

Each computer-controlled boat is guided by its own artificial-intelligence (AI) engine, allowing each vessel to act

WaterRace features detailed 3D

scenarios, lighting effects, animations and ambient sounds.

The boats handle differently, depending on the water depth, wind direction and strength, and other weather conditions.

The title supports all current Mac 3D video cards. It has been built to run on any Macintosh with a G3 processor running Mac OS 8.5 or later, and needs 6MB VRAM but only 14MB memory. WaterRace was developed using Macs and SGI workstations.

French Touch is negotiating UK distribution, but the game is available direct from the company. It costs \$34 plus \$5 shipping and handling.

French Touch, www.waterrace.com





French Touch's WaterRacer is Mac-only, and features "advanced artificial intelligence" for realistic racina

# Low-end scanner ships

Agfa has announced its £99 Snapscan e25 USB scanner. It has a resolution of 600-x-1,200dpi, 42-bit colour, and offers three onbody programmable control-buttons. The buttons can scan an image and send it directly to the printer, send images by email, and launch Anfa's ScanWise software for manual control of scan settings. It has interchangeable colour handles - blueberry, tangerine and graphite - and comes with Optical Character Recognition software and Corel Print Office

Agfa, 020 8231 4903

# **Legacy connections**

Adaptec announced the PowerDomain 29160 SCSI card at Macworld Expo. San. Francisco.2001. It offers a datatransfer speed of 160MB/second, supports up to 15 devices, and is aimed at data and graphics professionals. No UK price was available at press time.

Adaptec has also taken the wraps off its FireConnect 4300 This is a PCIbased, 3-port FireWire adaptor for PCs and Macs. FireConnect 4300 will be available soon and is expected to cost £60. It offers datatransfer speeds of up to 400Mbits per second, and can support two-way transfers. Computer 2000, 01256 463 344

# **Animated Web app**

WebShocker 2.2 can create maintain and preview Web animations. It will produce GIF. Java and QuickTime animations, and offers a selection of painting and retouching tools. It can also import QuickTime movies, AVI files and MPEG files. WebShocker is compatible with Mac OS X Public Beta, and costs \$49. Recosoft, www.recosoft.com



# Eizo slims display

Eizo has released the first of its SlimEdge series of LCD monitors, the FlexScan L675. Designed with small spaces in mind, the monitor is thin and has a small footprint, yet boasts an 18.1inch viewable area (1,280-x-1,024 pixels). The monitor also includes a fivelevel, adjustable image-smoothing function.

The monitor has an adjustable-height stand with a vertical-movement range of

80mm, as well as dual Digital Visual Interface-Integrated (DVI-I) inputs. Hue, gain, saturation and colour-temperature controls are included, and the monitor has a 160-degree viewing

It also operates as a USB hub, with one upstream and four downstream ports. The FlexScan L675 costs £1,999.

Eizo, 01483719500

continues page 38



Apple updates

Apple has released

iMovie 2 audio clips.

an iBook (FireWire)

battery update, and

Mac OS Runtime for

Java (MRJ), version

tribal to techno

The audio clips consist of

11 music tracks and 14 sound-

effect collections that vary from

The International-English

Mac OS iBook (FireWire) Battery

Undate corrects problems

in recharging the battery in

the IE Mac OS Runtime for

Java (MRJ), version 2.2.3.

applications and offers

third parties to carry its

and bug fixes.

performance improvements

Apple does not permit

updates on cover CDs or offer

them for download Macworld

offers links to the latest updates

This update is important as it

is certified for use with Oracle

some FireWire-equipped iBooks

Last month, Apple released

223

# Trannie scanner ships

Polaroid has launched the SprintScan 45 Ultra multi-formation digital film scanner



and 6-x-7cm 2.500dpi resolution.

The scanner has a 3.8 optical density. Additional features include automatic dust-andscratch-removal. Bundled with PolaColor Insight Pro and PhotoPerfect Master software. the SprintScan 45 Ultra scanner costs £2 950 Polaroid, 01582 632 021

# **Nero burns CDs**

Ahead Software has announced the launch of NeroMAX, a £41 software solution for creating and copying CDs. Available now, the software enables users to record CD formats such as ISO data and mixed-mode data, which is both audio and video CDs burnt to ISO can be read by almost any operating system Other features include Disc Rescue which recovers incorrectly loaded CD-R discs. Computer Connections, 01432 704 700

## **Desktop magic** Straight Ahead Software has

released Desktop Magician

2.0, a utility to save desktop environments - including icon locations, applications open documents, mounted servers and

Pocket power

The LaCie PocketDrive (below)

is USB compatible, and comes

with either 4x4x24 or 8x4x24

speeds. The company's 75GB

FireWire hard drive (right) has

the "world's largest" capacity

more. The update has a host of new features. A single-user license is \$20. Straight Ahead Software, www.cruzers.com/~straightahead

# **Cross-platform files**

The Mac OS X version of Dave fileshare software



was demoed at Macworld Expo in San Francisco. Dave allows Macs to mount disks being shared by Windows

95, 98, NT, and Windows 2000 systems. It costs £106. Thursby software, 020 7731 7930



# **Fresh out**

Image Source has released its 100-CD So Fresh collection. It offers images from a broad collection of themes, including adventure and expeditions (illustrated), colourful fruits, families at home and wild landscapes. The collection is included in the So Fresh image catalogue, which also offers a CD browser with low-res thumbnails of images from each theme. CDs 1-70 of the collection cost £249: CDs 71-100 cost £349.

Image Source, www.imagesource.com, or 0800 037 3928

# Macworld LaCie stores **Expo** goodies

acworld Expo, San Francisco, saw LaCie launch its 75GB FireWire hard-drive. a 16x10x40x CD-RW, and demonstrate a "palm-sized" PocketDrive CD-RW.

The company claims the 75GB FireWire hard drive has the industry's highest capacity. It's hot-pluggable and mounts automatically when connected.

The £499 drive offers an access time of 9ms (milliseconds) and two FireWire connections. It does not require an external power-supply.

The PocketDrive CD-RW is USBand FireWire-compatible, and measures 158-x-152mm. Two varieties will be available: the 4x4x24x is now shipping.

and costs £299; and the 8x4x32x ships in February and will cost £339. The drive is hot-pluggable, and can recognizes which I/O it is

connected to It can be daisychained with other FireWire products, and has two FireWire slots on board. It can take its power from a Mac or through its own power supply. Each unit ships with one rewritable and one recordable CD Software includes Toast 3.8

The LaCie CD-RW 16x10x40x comes in two varieties - FireWire (£339) and SCSI (£299). At optimal speed, it can burn an entire 650MB CD in four minutes. It offers an 8MB buffer, which helps maintain a continuous data-stream, and protects against buffer underun. LaCie, 020 7872 8000

# Pixologic makes 3D Mac move

Pixologic has released ZBrush version 1.1 for the Mac – a digital-imaging solution that creates 2D and 3D images. The application allows lighting, texture and shadow effects to be altered, materials (stone, wood, water) to be changed and objects stretched and resized. Multiple effects and transformations can be applied simultaneously.

The application supports 2D and 3D export

such as Fog and Mist. It can rework imported images, and build images from scratch. Version 1.1 features bug fixes and enhanced tool-sets. It requires a G3 processor, 128MB RAM and a monitor resolution of 1,024-x-768 pixels. ZBrush costs \$585. The 1.1 upgrade is free to registered users. Pixologic, www.pixologic.com

and import, and environmental settings,



# **Epson ships SoHo** portable projectors

pson has released a quartet of portable projectors for the small and home office (SoHo) and corporate markets – the EMP-715, EMP-5600, 7600 and ■ 7700 models. The EMP-715 is for SoHo professionals and offers 1,200 ANSI lumens brightness. The £4.799 projector also features a PCMCIA card slot – for cards carrying image data, including JPEG and 24-bit bitmap image

The EMP-715 supports VGA (Video Graphics Array) and SXGA (Super Extended Graphics Array) signals, and has adjustable screen-size and electronic zoom-controls. A speaker is built-in, and the device can be controlled remotely. This portable projector weighs 2.7kg (6lbs), has a lamp life of 1,000 hours, and a contrast ratio of 400:1. It can project from 26-300 inches, and offers keystone correction.

The EMP-5600 is a 2,200 ANSI lumens SVGA (Super Video Graphics Array) projector – and brother to the EMP-7600,

> a 2,200-ANSI-lumens XGA (Extended Graphics Array) projector. The projectors feature keystone correction and carry two computer inputs. They support all video formats, according to Epson. The EMP-7600 includes a high-aperture LCD panel, so light output can be increased. The projectors cost £4.899 and £6.499 respectively. The £7.799 EMP-7700 is Epson's

top-of-the range projector. It enjoys all the features of the EMP-5600 and EMP-7600, but has a brightness of 3,000 ANSI lumens. The XGA projector is capable of supporting signals from VGA to UXGA (Ultra Extended Graphics Array) resolutions. It supports analogue, digital-video and worldwide-video input signals. It offers Keystone correction, and can project from 22-300 inches.

Sony CD drive teed-up

Microtek is shipping the ScanMaker 8700, which offers USB and FireWire

(EDIT) – allowing transparencies to be scanned without glass. The 8700

is a 42-bit scanner with a resolution of up to 1,200-x-2,400 dpi.

Bundled software includes Adobe Photoshop LE, Adobe

Acrobat Reader and Abby FineReader OCR (Optical Character

connections. The £681 scanner features Emulsion Direct Imaging Technology

No glass for Microtek scanner



# Heavyweight lightweights

Epson's latest portable projectors - including the FMP-5600 (above), the EMP-7600 (below) and the FMP-7700 (left) - are aimed at the corporate and SoHo markets



housed in a silver-grey case, and

comes with a wide-ranging collection

of software - including Adaptec Toast,

Arcsoft VideoImpression, Photobase and

LiquidPlayer. It costs £297, and ships with

a CD marker-pen.

Sony (SCPEE), 01932 816 660

Dantz Retrospect Express, SonicWorx,

# Third-party updates

at www.macworld.co.uk/undates.

Macromedia Authorware 5.2

This allows Authorware applications developed in Windows to be delivered to the Mac. It includes a local runtime-player and browser plug-in. It also updates the authoring environment and makes the application more stable

Charts Pro 1.5.1

Version 1.5.1 adds an animation engine to Adrenaline Charts Pro 1.5. Animations will export to QuickTime, PowerPoint or Director. The product now integrates with Adobe Photoshop, supports layers and is optimized for the G4 processor's Velocity Fngine

# Cleaner 5 0 1

This updates Terran Interactive's video-to-Web solution, fixing some bugs, and adding the ability to automatically determine between interlaced or progressive-scan video. The company recommends the update to all Cleaner 5.0

continues page 41



Microtek, 01908 317 797

Recognition).

Sony Computer Peripherals and Enhancements

Europe (SCPEE) has launched a new external

CD-RW FireWire drive. Sony calls FireWire

I-Link. The CRX1600L-RP is a platform-

independent CD-RW kit. It can record

Macintosh and Windows computers.

at 12x, and rewrite at 8x on both

It reads at up to 32x. The drive is





# ViewSonic's **CRT** range

iewSonic has released its P220f and GS815 flat-screen CRT displays. The P220f has a 22-inch screen – with a 20-inch viewable area – and uses ViewSonic's proprietary

> PerfectFlat technology that deflects light away from the user and

yields a flat, distortionfree image, with minimal glare, according to ViewSonic. The £579 screen uses a 0.25-0.27mm variable aperture-grille pitch and offers a

flicker-free resolution of 1,280-x-1,024 pixels at 89Hz, and a maximum resolution of 1,600-x-1,200 pixels at 77Hz.

The GS815 – part of the Graphics Series displays - is a 21-inch screen, with a 0.21mm horizontal dot-pitch. The monitor offers a maximum flickerfree resolution of 1,920-x-1,440 pixels at 80Hz, and costs £606.

Both screens use digital OnView controls for display settings. The base design of both monitors has been redesigned to accommodate a USB hub, which is an optional extra.

Both displays are backed by a three-year Express Exchange warranty. ViewSonic, 01293 643 900



### Flat hase

The flat-screen 22-inch P220f (above) and 21-inch GS815 (left) have redesigned bases that incorporate an optional USB hub.

# CDs & books

# Biblical epic

IDG's *Photoshop 6.0 Bible* for Macintosh is a complete guide to the imageguiding learners through photo retouching,

special-effects. It comes with a CD-ROM containing plug-ins, artwork and four bonus chapters. The book costs £30. All on-sale IDG titles are available at up to 30 per readeroffers) or by calling 020 7831 9252.

### Net game-guide

The Good Web Guide to
Games is packed with facts about online game sites. The book features the essential lists e-zines to use for online reviews. *The Good Web Guide to Music* includes Web-tool Web-site guide. The books cost £4.99 each

# The Web in rough

the sixth edition of the Rough Guide to the Internet. from getting connected, to building a

is packed with information to help with travel. It costs £6. The Rough Guide to Shopping Online costs £6 and is

Rough Guides, 020 7556 5000

**Macworld February 2001** 

# Canon's bright light

Canon has launched the LV-5100 LCD projector. The £2,400 projector has been developed to offer high-brightness resolutions, and comes equipped with the capacity to link up to, and project images from, most DVD players and games consoles.

It is equipped with a 120W lamp that delivers a brightness of 700 ANSI lumens. It can handle Super Video Graphics Array (SVGA, 800-x-600-pixels) resolutions, and is equipped with a series of inputs for high-quality video, DVD and personal computer-image sources. It operates at a low 39dBA noise level, and features include digital keystone correction. The device also offers Hybrid Gamma Correction, which combines analogue and digital gamma-correction for better colour control

Canon, 0800 616 417



# Bright spot

Canon's LV-5100 supports SVGA resolutions, and is designed for use with videos, computers and DVD players.

Fujitsu gives MO for your money

Fujitsu has launched its family of Magneto-Optical (MO) removable-storage drives, the DynaMO 1300SF and 640SF. They come in capacities of 1.3GB and 640MB respectively, and offer better performance and durability than the previous SD/SE series. The 1.3GB models have also had their prices cut.

The 1300SF-SCSI drive offers a maximum data-transfer rate of 5.9MB per second and a 23ms seek time. The drives are available in both USB and SCSI.

Each model is supplied as a complete kit that includes the drive, software, interface cable and one MO data cartridge. The SF series is also read/write compatible with ISO 3.5-inch MO media with capacities of 640MB, 540MB, 230MB and 128MB. The DynaMO 1300SF will read/write to 1.3GB GIGMO standard

The 640SF drive costs £187, while the 1300SF costs £221 for the SCSI model and £231 for the USB model.



The MO discs have been designed to withstand extremes of heat and cold. Additional media costs £13 (1.3GB) and £7 (640MB). Fujitsu, 020 8286 5139

# Music propelled on Propellerhead has released

Reason, its music system.

It features samplers,
analogue synths,

analogue synths,
mixers, step-time
drum machines, effects
and a real-time multitrack
sequencer. The £299 application

is styled with the look-8-feel of a classic studio rack. It can hook-up to MIDI keyboards, so all the settings and effects can be controlled straight from the keyboard.

Propellerhead, www.propellerheads.se

# Virtual keyboard

Niemeijer Consulting has released KeyStrokes

2.0.1, its softwarebased solution that lets users write using a mousecontrolled, on-screen keyboard. KeyStrokes

can create multiple dictionaries for different languages and topics, and record commonly used phrases. It costs \$49. Niemeijer Consulting, www.niemconsult.com

### Video data-transfer

Coriogen Eclipse has been released by Vine Micro. This unit will place computergenerated data or graphics on video footage, whether



The £306 Coriogen Eclipse can be attached to a laptop, desktop, any camera with S-Video output, or any piece of equipment with a standard video input.

Vine Micros, 01843 873 311

# CDs packed in

Duraweld has launched its Compupack binders for storing and indexing CDs, CD-Rs and DVDs. The binders have a polypropylene exterior with sleeves for keeping discs scratch free. Prices range from £3.60 to £35. Compupack, www.compupack.co.uk,



### Monitor magic

The VG175 (above) and VP150m (below) use ViewSonic's SuperClear technology to improve image quality. The 510L (above, right) – which has a 15-inch viewable screen – and the 710c (below, right) are part of the company's Nokia range.



# Winter monitor roll-out



iewSonic has expanded both its View Panel LCD range and its Nokia Display range to include the VP150m, VG175 and the Nokia 510L and 710C. Both the VP150m and VG175 LCD displays use SuperClear and 3X-LCD image-enhancing technology. SuperClear improves colour and image quality, and 3X-LCD technology increases video response-time making both screens ideal for gaming, DVD and streamed video, according to ViewSonic.

The £799 VP150m is capable of receiving both analogue and DVI-compatible (Digital Video Interactive) inputs. The monitor has an XGA (Extended Graphics Array) resolution of 1,024-x-768 pixels. The display has a contrast ratio of 300:1.

The £1,299 VG175 features a 17.4-inch screen, and comes with two analogue ports – allowing it to be connected to two devices. The display also features a 160-degree viewing angle, has a resolution of 1,280-x-1,024 pixels and a 400:1 contrast ratio.

The Nokia 510L and 710C are part of ViewSonic's Nokia Display Products Range. The Nokia 510L has a 15-inch viewable screen, and measures 2.6-inches in depth.

With a resolution of 1,024-x-768 pixels, the 510L has a contrast ratio of 350:1, supporting 16.7 million colours.

The Nokia 710C is a 17-inch CRT monitor, and also has a resolution of 1,024-x-768 pixels at a 85Hz refresh-rate.

The display features a microphone and two integrated 5W speakers. The 710C supports voice recognition through an external microphone. The Nokia 510L costs £649 while the 710C costs £199.

See this month's Test Centre for more monitor details.

View Sonic, 01293 643 900



# Maths app adds up

Mathematica 4.1 from Wolfram Research Europe is a serious upgrade to the company's technical-computing solution.

The application won a nine-star rating in the October 1999 issue of *Macworld*, and was praised for its "number-crunching", speed and features. Reviewer, Charles Seiter, said: "It's the best program I've seen in ten years of reviewing technical software".

This flexible application will analyse and calculate all manner of complex, and not-so-complex, mathematical problems. Results can be delivered in mathematical, diagrammatic or table forms.

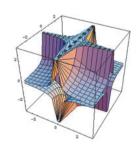
New features include speed improvements when calculating statistics, and Java integration with J/Link 1.1. Differential-equation solving has

been improved, and the program can now copy-8-paste formulae into Web browsers. Mathematica 4.1 can import/export between a number of new file-formats, including Excel.

The application was developed to help technical professionals solve large data sets and complex calculations, and to help them communicate technical content over the Internet. The J/Link 1.1 support means that Java developers can use Mathematica in their online applications, and also enables Mathematica to make use of all the functionality of available Java applications.

Mathematica costs £1,190 for a commercial licence. A student edition of Mathematica 4.1 will be released in early 2001.

Wolfram Research UK, 01993 883 400



Boffin's bonus
Mathematica, from Wolfman
Research, was developed for
architects, academics and
mathematicians.

or 0800 0852 693

# David Fanning

I often defended BT when people slagged it – but now I know it sucks



# BT and the beast

've always been one to support the put-upon — and this sympathy even extends to mega corporations that should be able to look after themselves. Microsoft, for example, is a company that I'm always sticking up for because, whatever its crimes on the PC platform, it makes good software for the Mac. The other mega corporation that often finds itself at the receiving end of abuse is BT. Again, I've often defended it — until now, that is. In the past few weeks I've discovered just what misery BT actually wreaks.

My voyage of misery all started innocently enough, as I contacted BT to see about getting myself a high-speed ADSL connection. My first inkling that all was not as it should be was when BT took an eternity to figure-out which was the right department for me to speak to. They offered me a free trial of business-speed 500kps ADSL for a year. I've been using 128kps ISDN for some time, but this kind of offer is not to be sneezed at. So without hesitation, I signed up for BT's VIP ADSL scheme.

Up to this point, the BT folk were as polite and helpful as can be, but there was a problem looming. The problems started when BT informed me it would need to downgrade my line from ISDN to a standard phone line. Right now, BT's engineers aren't trained to switch straight from ISDN to ADSL. They have to start from scratch.

# Belly-up

No problem, I thought. Considering I'm about to get free high bandwidth for a year, I could always downgrade to a regular line before getting upgraded to ADSL. However, the VIP-scheme people told me that they couldn't guarantee that the ADSL line would work. A set back, but not too worrying — after all, it's going to be free for a year.

It was now that things began going belly-up because, up to this point, I had been dealing with BT's PR people. Now, though, I was a regular punter — and was placed in the hands of its customer service people.

The first call was to get my line changed from ISDN to a normal line, which went smoothly enough. A helpful and polite guy said the line would be switched from ISDN at eight o'clock in the morning. I did wonder why an engineer wasn't needed, but, after consulting a senior BT customer service bod,

I was assured there was absolutely no need.

The next day, the ISDN was turned off and the normal line turned on. The only problem was that, because no engineer had been called, the ISDN box was still connected and – bewildered by the analogue signals being fed to it – refused to work. By noon I was red-faced, bouncing around BT's voicemail system like Theseus in the minotaur's labyrinth. Eventually, I got through to someone to whom I attempted to explain my situation. It was an uphill struggle but, after about 30 minutes – 25 of which I spent on hold – the woman claimed to understand my plight. She then transferred me to the ISDN department.

The ISDN guy immediately understood where the installation had gone wrong. He explained that the customer service people aren't specialized in ISDN and would have little chance of understanding the problem. It transpired that I am alone in ever asking to be downgraded from ISDN, and that the procedure was a first for BT.

To my relief, he informed me that an engineer had been booked to do the necessary work – a full five days later.

Over the next four days I spent a total of five hours on the phone to BT, most of which was spent listening to one of the two most painful pieces of hold-music in Christendom. I was lied to, fobbed off, told "facts" that were patently untrue and generally treated like ignorant scum. More annoying than this, was that the people who were feeding me this garbage were entirely pleasant and reasonable. Each took turns to sympathize and console me, while telling me that everything would soon be solved – and that they would call me back to make sure.

Eventually, I got my phone reconnected after six days. There was no apology and no explanation. They even tried to stiff me on the considerable compensation I was owed. This was the most traumatic experience I've ever experienced at the hands of a utility. I dread to think what will happen when I take the next step towards ADSL.

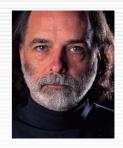
The moral to this tale, I realized, is that some companies are unpopular because they are bad at what they do. BT is in this number. The company should spend some of its obscene income on charm school for its engineers and technical training for its customer-service staff. Did I say I'd defended BT? No more. BT sucks.

"I got my phone reconnected after six days, but there was no apology or explanation"



# Michael Prochak

The US election fiasco is the best argument possible for Internet voting



# Vote of confidence

s Hunter S Thompson says, the humour of the campaign trail is relentlessly cruel and brutal. Across the pond, it looks like the joke is over and the Bush victory, although bringing a ruddy glow to the shiny pate of William Hague, signals a dyslexic downhill run into hardship, disappointment and a queasy sense of betrayal.

The fact that Gore actually won the popular vote and still lost the election could be construed by some to be a nail in the eye for democracy. And there's been no shortage of smugness here on the part of patronizing political pundits that take great joy in pushing the pap that our system is so much better. They get away with it for the most part because, broadly speaking, our humpbacked electorate hasn't got a clue how our system works, doesn't care that we have no written constitution or bill of rights and aren't even aware that their so-called 'secret ballots' are nothing of the sort.

I read somewhere that, in the US, many people were so unsure whether they were voting for Bush or Gore because of poor ballot design. The rumour that they were knocked-up in some dank back-room at Microsoft is, of course, totally unsubstantiated. But this does serve to underline the oft-neglected fact that design is important, and a skill of which sexless civil-service scumbags are incapable.

The real issue here is that we're now in the 21st Century and, for the most part, still casting our votes on little scraps of paper that are then counted by a range of morons with any number of hidden agendas. So why can't we devise a direct method where each and every vote is registered and actually counts?

According to a report entitled Embracing
Technology, produced by online bank Egg and
research company Mori, more than half of Britain's
adult population will be using the Internet regularly
within six months. Around 15m people now have
Internet access at home and the forecast is that this
will increase to 23m by mid-2001. In the next four
to five years about 12 million people say they would
feel comfortable banking on the Net, and a similar
number can envisage buying a mortgage or insurance
online. So, is voting more important than shopping?

Our dependence on new-technology products is also growing, and the report says that 14 million sad individuals believe they cannot live without their mobile phone. It also reveals that 28 per cent feel they

are dependent on new technology for keeping in touch with people and gathering information, and that, within four to five years, about 10 million will depend on new technology for shopping, and 14 million for banking. Some 53 per cent of those surveyed said they were dependent on their PCs.

Although the report also states that new technology is central to British life, there are still around 29 million adults who do not use a PC and a further 9 million that say they never will. Nearly 18 million people have a PC or laptop for personal use, but as many as 61 per cent of them use it only for stuff like word processing. But, according to a Mr Harris (Egg's chief executive), the future is looking good for Internet companies. On average, Internet users spend nearly four hours a week online at home. This Christmas, there was a major blitz on selling Internet TV into the home, and despite the obvious limitations and micky-mouse technology, a lot of people are still buying WAP phones. So, with over half the population already online, and a lot more on the way via TV and mobile phones, maybe online voting should be looked at more seriously.

Networking and infrastructure is no problem. Security, if the banks and financial institutions can be believed, isn't a serious issue. Vote counts could be more accurate, impartial and practically immediate, and parties wouldn't have to worry about getting people to the polls when the weather is crap, because they'd never have to leave their homes. Considering that less than half the population ever votes anyway, we could get the whole thing up-and-running now, and probably be no worse off. And if everyone could vote with that degree of immediacy, we'd have referendums that worked the way referendums were intended — to reflect the will of the people.

Thomas Jefferson once said that people get the sort of government they deserve. Whether the Americans deserve a dunce like Bush, or we deserve a dunce like Hague or Blair next time around depends on how the votes fall and whether the system works. Giving individuals direct control of the voting system probably scares the pants off most politicians. But would it really be that much worse than the systems we've got now? As the French poet Paul Valery put it, "Politics is the art of preventing people from taking part in affairs which properly concern them." The Internet could start to change all that.

"Whether the Americans deserve a dunce like Bush depends on how the votes fall and whether the system works"



 $\star$   $\star$   $\star$   $\star$  /9.0-10.0 = OUTSTANDING



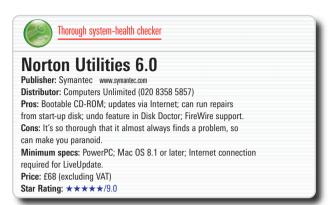














# Norton triumph

Every tool you need for a healthy and speedy hard drive, plus some safety nets for lost or dumped

# Gone but not forgotten

If you have ever emptied your Trash shortly before you remembered you threw the wrong thing away, you will appreciate UnErase.

f you've used a Mac for any length of time, you're probably already familiar with Norton Utilities. Originally introduced on the Mac back in 1989, this package has consistently provided a selection of powerful utilities that complement, and often surpass, those included by Apple. Version 6.0 offers some small improvements to the familiar tool-set for routine disk renair disk optimization and data recovery. Plus there's a sizeable range of new features, such as custom ontimization profiles in Speed Disk – which can be used for digital video, MP3 files and other specialized purposes – and FireWire device-level support catering for a broader range of evolving user demands

# **Untouched Unerase**

is very straightforward, and, in most cases, you should simply choose Easy Install – which installs all necessary components. You do have the choice of a Custom Install if you feel that you want to select particular components and not others. Some users, for example, tend to use this program for the Disk Doctor and Speed Disk tools, and may not want to bother with functions such as Unerase. However, whichever installation you

Like all previous versions installation





It's easy to defragment your hard drive to cut down non-contiguous files that lead to longer seek times. Or, in English, use Speed Disk to tidy up messy hard drives to make them faster.

choose you'll still have to restart your system since many components will be activated only after this Also be sure to eiect the Norton Utilities CD-ROM before you restart, since the CD is bootable, which is particularly useful if your system is really screwed up and you can't boot from the hard drive. But, you might find that some systems will boot from it if it's still in the drive whether you want it to or not. The manual strongly recommends that you run Norton Disk Doctor from the CD before installing, so you're sure your start-up disk is healthy before you install the full program. A lot of users don't even bother to install the whole program, but simply run the tools from the CD to repair or optimize their drives As mentioned earlier, Norton Disk

Doctor is the most commonly used component of the package - it can check for defective media, partition-table damage, directory damage, and problems with individual files. The defective-media check is handy, but takes time since it has to scan your entire hard drive. A media check of a 8.5GB drive can take nearly 30 minutes. Unless you have a very old drive on the brink of failure, you won't want to run this check every time. If you only want to diagnose the disk, or if you want to disable specific tests, you can do so from the Norton Disk Doctor Preferences dialog box. For most users, doing a regular scan of partition tables and directory structure will prevent most mishaps. But if you have a drive that you think is seriously damaged, you can go to the Preferences menu and enable all checks.

Because Norton Disk Doctor repairs

directories during its scan it's possible that a repair might cause an unwanted result. The Undo Renairs command. gives you an additional safety net should anything unexpected occur during a disk renair - by returning your hard disk to the state it was in before Disk Doctor was run. The great thing about Disk Doctor is that it checks every area of your hard drive and locates problems that need immediate attention, as well as file problems that could cause problems in the future. All found problems are displayed as problem alerts; you decide what to fix and what to leave

# Drive defrag

Since I work with many audio files I tend to use Speed Disk guite a lot. Over time, files stored on your drive may occupy non-contiguous sections of the drive, increasing access time. SpeedDisk is particularly useful for defragmenting files on your drive and reorganizing them so they occupy more efficient, contiguous portions of the drive

A Check Disk option will graphically display your file layout, and colourfully calculate the degree of fragmentation You can choose from several different optimization profiles – such as General Use, Multimedia, Software Development, CD-ROM Mastering and Recently Used Files. There are also options to verify the media, directories and data before the optimization. This is strongly recommended, since optimizing a damaged drive can make your drive inaccessible. Just to be safe, always make a full back-up before

using this component. Personally, I've used Speed Disk in its various incarnations for several years now, and the operation has always successfully optimized my drives without any damage whatsoever. Also, remember there's an ontion to ontimize your directories, which can generally provide a greater performance boost than just rearranging files.

Another thing to look out for here is driver-level security software. Because some copy-protected software makes use of hidden files that might be moved during Speed Disk optimization, you may need to uninstall certain applications before optimization and then re-install them later to ensure that files remain in their expected locations.

If you do the full install, FileSaver constantly records vital disk-directory information while you're working. If you accidentally delete a file, UnErase can examine the directory and help you recover your data. If you've got some serious damage. Volume Recover works

with FileSaver to resurrect drives that have crashed or have even been accidentally reinitialized. Hierarchical recovery in UnErase now lets you restore folders - as well as the files in them to simplify data recovery. You can even use these components with external or internal floppy-drives, Zip or Jaz drives. Although new FireWire support allows you to run Norton Utilities on attached FireWire drives and devices, when you start from the Norton CD, your FireWire drive might not be recognized, and you could be prompted to initialize or eject it. However, if you start from your internal drive with Norton installed you can examine the external devices

 $\star\star\star\star$ /7.0-8.9 = VERY GOOD  $\star\star\star$ /5.0-6.9 = GOOD  $\star\star$ /3.0-4.9 = FLAWED

Norton Utilities 6.0 also includes LiveUpdate to help keep your program files current via online access. LiveUpdate lets you know if your files are up-to-date by displaying version numbers and status, and you can also check the program file and virus definitions in the application's About hox – accessible from the Apple menu.

LiveUpdate 2 LiveUpdate Customize This Update Session Lanneot to Symantes, oneoli for new updates, and selectionly the updates you want. Update Everything Now Econoct to Symantes, automatically downbaciand installial lava lable observe. Schedule Future Updates Date Last Chesked: Date of Last Hotale

# Macworld's buying advice

Norton Utilities is a seasoned veteran, and it's saved my bacon on more than one occasion. The new version is powerful easy to use and probably one of the few applications for a Mac that would qualify as essential. Michael Prochak

Undate downloads

LiveUpdate will automatically check via the Internet for updates to Norton Utilities.

★/0-2.9 = UNACCEPTABLE



Ithough still a good idea, Norton's new version of AntiVirus 7.0 represents a relatively small step up from last year's 6.0. Considering the activity on the Macintosh virus scene - or lack thereof - compared to the rampant plague affecting our PC brethren, that shouldn't be all that surprising. AntiVirus 7.0 has more or less reached the level where refining features and not necessarily adding them, is adequate for the Mac community.

Essentially, this program does exactly what it says on the tin. AntiVirus finds and eliminates a wide range of viruses - including macro-viruses, which tend to be the most common types found lurking on Mac systems. These are often spread via Microsoft Office files transferred between PCs and Macs.

Norton AntiVirus features SafeZones

that can easily be configured through the application. A SafeZone is a folder where files are scanned automatically when they are copied or moved to that location. By default, the Desktop is a safe zone, and the Downloads folder specified in the Internet control panel can also be selected as a SafeZone with one click.

AntiVirus will alert you of any suspicious activity before it takes place and offers comprehensive features for scanning, repairing, and detecting viruses. New features in version 7.0. include automatic scanning of email attachments during downloading, simplified preferences that allow you to change multiple settings with a single click, the ability to update virus definitions without restarting the program, and the ability to turn AutoProtect on from the Control Strip.

AntiVirus 7.0 uses LiveUpdate for quick-and-easy program updates online. and the latest version provides http and proxy support for LiveUndate

AntiVirus 7.0 is obviously a competent product that's easy to set up and easy to use. The only question that remains is whether or not you should bother to buy it or not. I know people who've had six to ten years of serious Mac use and have never witnessed or experienced a virus. And that includes people managing networks of over 400 Macs. The reality is, Mac users don't come close to facing the number of



viruses that PC users do, and whenever a virus appears, good Mac samaritans have always been there with a free utility to check and repair your drive.

# Macworld's buving advice

There are more new features in AntiVirus 7.0 than there are in Norton Utilities 6.0 and I'm sure this is one of those programs that is good to have if you're paranoid. But whether or not you need it, or can justify spending money on it, has to be a matter of personal choice. If you spend a lot of time downloading stuff from the Net, then maybe it's better to be safe then sorry. However, given the Mac's track-record with viruses, I probably wouldn't bother. Michael Prochak

### Viral alert

AntiVirus 7.0 shields Macs from the, relatively, few viruses that affect them. The utility allows the level of protection to be set - from none to full



# Photoshop 6 for Dummies

Author: Deke McClelland Publisher: IDG Books From: Macworld (020 7831 9252)

www.macworld.co.uk/ readeroffers

Pros: Easy to follow: clearly laid out; useful explanations of general graphics theory. Cons: Style can be irritating; chapter on Web graphics poorly explained; not enough colour pages

Price: £18.99. Available to Macworld subscribers for f11 30

Star Rating: ★★★★/7.7

# Photoshop 6 **Bible**

Author: Deke McClelland Publisher: IDG Books From: Macworld (020 7831 9252) www macworld co uk/ roadoroffore

Pros: Comprehensive; lots of useful tips; good explanations of theory behind image manipulation

Cons: Style can be irritating; not enough colour pages; occasional lack of depth on specific tools.

Price: £29 99 Available to Macworld subscribers for £19.80

Star Rating: ★★★★/8.7

# Adobe **Photoshop** 6.0 for **Photographers**

Author: Martin Evening Publisher: Focal Press (01865 888 180) www.focalpress.com

Pros: Good consideration of all issues in imagemanipulation sequence; indepth coverage; CD contains step-through tutorials Cons: Too wide-ranging

for some users. Price: £24.99 (Free with a 12-month subscription to Macworld see page 100\

Star Rating: ★★★★★/9.5

words, for people "who don't want to make Photoshop their life", but do want to grasp the fundamentals of image editing and manipulation. Accordingly, the book begins by working its way through even basic tools like Hand, Zoom and the Navigator palette, and graduating onto topics such as selection techniques, layers and filters, retouching, and selection techniques. The learning curve is steep, but

eke McClelland's Photoshop 6

for Dummies is, in his own

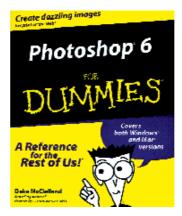
McClelland isn't afraid to spell out even the obvious. He throws in plenty of analogies along the way to help Photoshop newbies understand the principles behind the tools. Analogy, in fact, is both the strength and weakness of Dummies: sometimes it works, sometimes it doesn't

"Imagine you're the victim of a terrifying scientific experiment that has left you 1mm tall," is how McClelland begins an explanation of pixels in Chapter 4, finishing with: "What does this little trip down sci-fi lane have to do with Photoshop?" I'm glad he asked, because I wasn't sure either. The style - full of iocular, sometimes-patronizing asides - is occasionally wearing, but on the whole does a reasonable job of leavening a convoluted subject without baffling or scaring the novice Photoshop user.

What is excellent about *Dummies* is the trouble McClelland takes to explain some of the more complex principles behind Photoshop's working methods. His sections on resolution, colour management and colour correction are enlightening even for a seasoned Photoshop user. But the chapter on Web graphics - on the face of it a good idea - departs from the usual principle of "s-p-e-l-l-i-t-o-u-t", bandying terms such as colour palette, matte, bit depth and colour profile around without enough explanation. It's also questionable how far a novice user will understand principles of colour correction via a book printed in black-&-white: the 16page colour plate section in the middle just isn't enough. All that said, though, there's no other book that I can think of certainly not the Adobe tutorial – that does such a fine job of getting Photoshop users from baffled incomprehension to nodding acquaintance in under 500 pages.

# Photoshop 6 Bible

Like Dummies, McClelland's Photoshop 6 Bible (with its own CD of artwork and images referred to in the text) starts from the basics. There are chapters on painting and editing, filling, retouching, restoring, paths, masks, filtering, layers and text, all



the way up to a well-covered section on Web graphics and another on printing. The Bible sets out to live up to its ambitious title. It contains everything from the finer points of splash screen know-how - hitting ₩ while choosing About Photoshop displays the beta version's Venus in Furs screen - to the more arcane reaches of colour theory (the chapter on colour management goes a long way towards demystifying this much-misunderstood subject).

There's something of use here for every Photoshop user. And where the Adobe manuals simply concentrate on explaining how Photoshop handles matters such as colour mapping and tonal curves, the Bible gives the reader the essential background to the science and theory behind those topics. There are areas that are occasionally skated over: picking a couple of thorny issues at random (trapping to compensate for press dot gain; how to print a duotone as spot separations) I found no more information in the Bible than the coy vagueness into which the Photoshop 6.0 manual retreats. But then again, the Bible is a general book, and perhaps it's a necessary evil to occasionally sacrifice depth in favour of breadth.

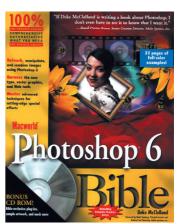
The Bible suffers from the same lack of colour pages as does *Dummie*s (two 16-page sections), and, in this advancedlevel book, that's a more serious criticism. It's also expensive - £30 is a lot for an adhesive-bound paperback whose binding quality isn't going to hold its 940 pages in place for long. And, despite the fact that this is indisputably a book for professionals, McClelland still can't lay off the clownery. This is our man in defence of his (indefensible) preference for the term "object oriented" to describe Photoshop's vector tools: "My preference suggests an air of romance, as in, 'One day, I'm going to shake off the dust of this three-horse town and pursue a life of romantic adventure in the Object Orient!" Read too much of this inanity at your peril. But for all the fetid humour,

McClelland's knowledge of Photoshop is beyond reproach, and even a cursory glance through the Bible is likely to introduce all but high-level users to features they didn't know existed.

# **Photoshop for Photographers**

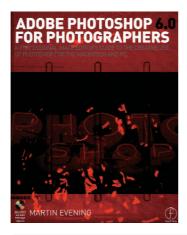
Despite its title, Martin Evening's Photoshop 6.0 for Photographers is really a Photoshop book for all of us. Evening's brief is to teach photographers the basic and advanced skills of digitallymanipulated imaging. His book is a diligent and evenly-weighted walkthrough of all the issues in the capture-manipulate-output sequence. Despite the inevitable bias towards photographic applications, there's a lot in here that's valuable for the general Photoshop user.

Evening starts from the very basics, with excellent in-depth advice on digital capture (including scanning, digital cameras and Photo CD), working through how to configure Photoshop (advice on improving performance, memory allocations, PCI cards and video display), colour management (this chapter is far and away the best I've ever read on the subject) and file output and proofing (for press, fine art printing, inkjet, soft proofing, and even image database management). His coverage of Photoshop's functionality is no less thorough. He starts with an introductory chapter on the Photoshop workspace, covering all the tools and photographeressential functions, such as the Extract command and the Art History brush, and works on through chapters on file formats, image adjustments, colour adjustments, image repair, montage techniques, black-&-white and colour effects, layer effects and filters. Evening also devotes a lot of space to efficient working practice, including a long list of shortcuts - some of which aren't in the manual - and good advice on preference settings. ImageReady, not so essential for photographers, is relegated to an









Appendix, although coverage is again reasonably thorough. The CD contains ten tutorials on subjects such as masking and montaging, and an interactive demonstration of Photoshop 6.0's filters.

If there is a complaint about Photographers, it's the fact that it's not solely a Photoshop book: we're on Chapter 6 (of 16) before Evening gets around to looking at the intricacies of Photoshop itself. Although there's an excellent case for arguing that to use Photoshop to its best advantage, it's necessary to know about what comes before and after the manipulation stage, the wide-ranging coverage of this book is

likely to disappoint some users who just want to know what key to press in a given set of circumstances.

# Macworld's buying advice

If you're new to Photoshop, throw out your Adobe tutorial and use Dummies instead – but equip your frontal lobes with a jocularity filter first. The Bible will answer most questions for most people it's worth having if you're rich. Digital photographers should buy Photographers even if they have to pawn their analogue SLRs to get it; other Photoshop users will also find it useful.

Karen Charlesworth



www.wizworks.com/macsoft Distributor: Softline

(01883 745 111)

Pros: Mr Potato Head; fun for kids; engaging in parts. Cons: Odourless Play-Doh; limited appeal.

Min specs: A 68030 Mac; 25MHz or faster; System 7; 8MB RAM; 2x CD-ROM. Price: £20 (including VAT) Star Rating: ★★★/6.8

escribed as "Four Great Kids Games in One", the Mac Kids Pack basically does what it says on the box. Candy Land Adventure, Mr Potato Head Saves Veggie Valley, Play-Doh Creations and Playskool Puzzles are positioned as educational tools that allow kids of four and upwards to learn and play simultaneously.

Sounds like a parent's dream, but do they cut it with the offspring? Jon-Luca and Lolly, aged six and four respectively, comprise the crack squad who put the Mac Kids Pack to the test – along with a little parental guidance and support, of course

A sweet tooth is a prerequisite for Candy Land Adventure, where sickly pinks meet psychedelic purples in a visual soup reminiscent of Bonnie Langford, Gianni Versace and last night's dinner. Of course, as I'm in the age bracket of 32 and upwards, perhaps this isn't relevant in kid-land, but Jon-Luca certainly thought it was a bit girly.

A fairly long intro sequence sets the scene, and it seems all is not well in Candy Land. King Kandy has been kidnapped by Lord Licorice, and we have to rescue him. It's a long job that entails travelling through six magical lands, picking up candy and meeting some rather sweet characters

Both kids (and, er, myself) had problems navigating - it's not a particularly intuitive interface and almost every move requires a return to the instruction book. Lolly certainly couldn't play this on her own, and therein lies a major problem because, if an adult is required to supervise, the game really needs to be a bit more engaging.

Overall, there's a lack of direction that prolongs the game, which also, eventually, exposes its lack of substance. Jon-Luca and Lolly got bored quickly, thankfully - because I was starting to feel very sick

Despite not being exactly the



### Simpering girlie

One of four games in Mac Kids fun Pack, Candy Land Adventure is full of pinks. However, Mr Potato Head and Play-Doh (to a lesser extent) make up for this – although there's still room for adventures in cross-dressina.

Mr Potato Head who stars in Toy Story, this was much better game. It represented a far more creative and engaging challenge than Candy Land, and Jon-Luca and Lolly were completely absorbed.

The game features interesting characters and amusing tasks such as cross-dressing Mr Potato Head and turning him into a simpering girl. This halted the game for some time while a rather uncomfortable discussion was held on the difference between boys and girls, but not for long as the kids were anxious to see what happened next.

The animation is slick, the interface absorbing, and the storyline becomes irrelevant as the sheer level of interaction is enough. Top marks from all of us.

Play-Doh is one of the best inventions ever, but sadly it doesn't do it for me on a computer. It just doesn't smell right. Jon-Luca and Lolly didn't agree, however, and this game went down a treat.

They invented different characters, created new hairstyles and designed

clothes to, quite frankly, rather disgusting effect. But they were happy, and even better, quiet for a whole half hour. They also played well together, spurring each other on to push the boundaries of taste.

And, finally, to Playskool Puzzles. This is simple stuff, and it's good as far as it goes. Both kids had no problems solving jigsaw puzzles and connecting the dots, but it was probably a bit too basic for them. After solving a puzzle once, they wouldn't bother again. My major problem with Playskool Puzzles is that I can't see the point of playing games like this on a Mac. The kids would have more fun playing with a real jigsaw puzzle. As for the four-and-up age guide, a two year-old could crack this one.

# Macworld's buying advice

The pack is saved from being a "used once only" by the capers of Senor Potato Head. Other than that it's all a bit thin. There are much better ways to spend rainy days.

Jon Carney

**Macworld reviews** Macworld reviews

Magenta

Yellow

Spaced-out

cuhe-form

The CMY (above) and RGB colour

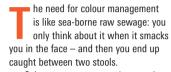
representations of colour, where

Accurate, plug-&-play colour-management solution

# Colorperfexion

Publisher: Colorperfexion (00 45 4636 1691) www.colorperfexion.com Pros: WYSIWYG colour accuracy from monitor to printed page; plug-&-playable. Cons: Some bugginess in Adobe Photoshop 5.0 and QuarkXPress 4.0. Minimum specs: Mac OS 8; Photoshop 5.

Price: Single-user licence, £575; five-user licence, £2,013 (excluding VAT) Star Rating: ★★★★★/9.4



Colour-management options tend to involve complex stand-alone applications. prohibitively priced profiles or labourintensive spectrophotometers.

What Colorperfexion (CPX) promises, though, is plug-&-play WYSIWYG colour accuracy from monitor to printed page, for just £575. That's a promise not to be sniffed at

CPX consists of an RGB profile for on-screen soft-proofing, seven specially tailored CMYK profiles, a reference image and a reference print.



Like the most reliable colour-management solutions, CPX is built on ICC technology (See "International colour organizations"). spaces (below) are mathematical which has made it possible to standardize colour spaces (See "Colour spaces explained") across a digital workflow. all colours are located on a three-CPX profiles are incorporated into the workflow using Apple's ColorSync, in tandem with the colour-profile preferences of applications such as Adobe's Photoshop, Illustrator and InDesign. At present, there are problems

> with QuarkXPress - but more of that later Digital workflows are only as good as





the black channels - showing undercolour removal (IICR) - for a newspaper profile (left) and an offset profile (right). The newspaper channel is darker, because a lot of black is used to replace the grays in the C. M and Y channels. This is because newsprint is extremely absorbent, and high IICR reduces the amount of ink used. The image on the right is lighter, because it is embedded with the CPX offset profile used on Macworld. Because Macworld is printed on less-absorbent coated paper, it can take more ink - meaning a lower level of UCR.

their weakest link - and this is usually the monitor. The same image on the same make of monitor in the same office can look wildly different from screen to screen. Sensibly, CPX makes this its starting point. Armed with the reference print and identical RGB file. you can calibrate a monitor using the Adohe Gamma control nanel This generates an ICC profile for the screen.

As with all monitor calibrations it's advisable to view the reference image from within a daylight box. This neutralizes shifting light-conditions caused by time of day and desk position. Every serious graphics environment should have one. They cost about £400.

But CPX comes into its own with its CMYK profiles. In theory, any colourmanagement system, such as ColorSync, should allow you to accurately display on-screen what you can expect to see in print, However, RGB and CMYK colours are at opposite ends of the colour

spectrum, and are displayed and

On a monitor, one lightens colours images are etched on the print cylinder).

These CMYK profiles make allowances for dot-gain (how readily ink soaks into the paper) and total ink coverage (the total ink saturation of a print job). In newsprint, dot-gain is high, because paper quality is poor. But for offset jobs that use coated paper, it's much lower. Conversely, ink coverage in newsprint is lower, but for offset jobs it's much higher.

Colorperfexion's CMYK profiles contain specially tailored colour-separation information. Above are

# lightened in very different ways.

by adding light; yet on paper, this is done by subtracting ink. This difference accounts for most post-press let-downs. Because of this, CPX's CMYK profiles are tailored for specific print-job requirements. There are three newsprint profiles, three offset profiles, and one for Gravure (used for huge print runs, where

To select the correct CMYK preference call your printer and ask what the dot gain and total-ink coverage

# International colour organizations

rhere are two key international bodies devoted to the understanding and management of colour: the Commission International de l'Éclairage (CIE) and the International Color Consortium (ICC).

CIE was founded in the 1920s to and exchange of information among member countries on all matters concerning the art and science of lighting. In the 1930s, it set out to establish colorimetric models that describe colours purely in terms of how they are perceived by people: by hue, saturation and luminancy.

To achieve this, it conducted a huge number of experiments. in which it asked human subjects to match colours under rigorously controlled lighting and viewing

For Macworld, the correct CMYK

gain of between 8-12 per cent.

conditions. It processed the results and published a family of mathematical colorimetric values.

In 1993 Apple and seven other leading IT companies - including Agfa, Microsoft and Sun – founded the ICC. Its aim was to create vendor-neutral, cross-platform colour-management systems (CMS).

The ICC has produced colour profiles to ensure that image colours remain correct during every step of digitization – from capture, to display, to output - and that different systems can display them correctly.

The ICC has defined seven classes of reference profile: input; display; output; device-link; colour-space conversion: named colour; and abstract. It is the first three that concern the management of colour

in workflow scenarios, and they are more commonly referred to as scanner, monitor and printer profiles.

A CMS as described by the ICC is a method by which the colour characteristics of all input and output devices are related to a common reference. At the core of all CMSs including Apple's ColorSync and Microsoft's Windows ICM 2 – is CIELAB, which is also the basic colour-model in Adobe PostScript (level 2 and level 3).

CIFLAR is a colour system. that was adopted by CIE in 1976. It is based on the discovery that somewhere between the optical nerve and the brain, retinal colour-stimuli are translated into distinctions between light and dark (L), red and green (A), and blue and yellow (B).

CIELAB is needed by CMSs because RGB and CMYK values (see "Colour spaces explained") do not represent the human experience of colour. Therefore, to keep colour consistent, we must change the RGB or CMYK values as they go from device to device. Doing this requires a way of specifying colour unambiguously, without reference to the vagaries of the device in question. This is the role of the reference colour-space, often called the profile connection space (PCS). CIELAB is commonly used as a PCS because, unlike devicespecific RGB and CMYK colour spaces, it represents colour in absolute terms. For this reason CIELAB is known as a deviceindependent colour space.

is for the paper stock used to print your newspaper, magazine, poster or calendar, Then consult the CMYK-profiles overviews in the CPX manual and select accordingly. preference was Offset B. This profile is designed for use with a coated paperstock of between 110-170g, a total ink coverage of 335 per cent, and a dot

The profiles also carry information about colour separations in both UCR (undercolour removal) and GCR (greycomponent replacement). UCR involves the replacement of some of the CMY component of neutral colours with an equivalent density of black, to reduce ink usage and improve reproduction GCR performs a similar function, but works in colours as well as neutrals to replace CMY with black.

# Baptism of fire

But does it work? The only way to test CPX was to use it on last month's issue of Macworld, compare the printed pages against their onscreen equivalents - and pray. I'm happy to report that the RGB nages and the printed versions were as close in colour as damn it.

I also ran a similar test using the previous issue of *Macworld*, which was output - as all earlier issues were - using generic RGB and Euroscale Coated CMYK Here, there was little resemblance between screen image and printed page Yet, when I selected the CPX RGB and CMYK colour profiles for the same pages they transformed before my eyes into reflections of their printed counterparts.

Another boon with CPX is that it doesn't matter if external artwork is embedded with wildly different colour profiles - because what you see onscreen is still what you'll get in print. This is because the CPX profiles show you how an image will print on your paper stock, whatever its embedded profiles. For example, in this issue of Macworld, we received an image from a freelancer that came in with a SWOPcoated CMYK profile. SWOPcoated is the default US colour profile, and contains about 4 per cent more magenta than the Euroscale profile used over here, and which gives less saturated skin tones.

Photoshop and Illustrator are the natural homes for CPX profiles. This is because they are bespoke graphics programs and are driven by powerful colour-engines. You select the CPX colour profiles in these apps' colour preference dialog boxes, and that's about it.

Unfortunately, as with all colourmanagement solutions, CPX is hamstrung by the disharmony between the Mac OS and the leading software houses.

We experienced a problem with CPX in Photoshop 5.0, where CMYK TIFFs refused to open. This, says CPX, is due to a clash with Mac OS 9.0.4. The suggested fix is to upgrade to Photoshop 5.5 or 6.0.

So, what about XPress? It's bad practice to use the XPress colour-engine for any colour-management system. This is because it's a layout tool, and its colour engine is feeble compared to that in Photoshop. CPX is still in the testing phase with QuarkXPress. To my horror,

though. I learned all this only after sending a third of the magazine off with the CPX profiles embedded in XPress, instead of Photoshop.

By all means colour-preview pages in XPress (by selecting the CPX profiles in the Colour Preferences dialog box), but make sure you uncheck Colour Management Active before sending pages. This gives you the WYSIWYG accuracy without the risks

In the end, of course, colour management is fine and dandy - but any system can come a cropper once your plates are sitting on the Heidelberg.

If the person operating the press has a stinking hangover, then pages may look cran whatever you do. And of course on most magazines – including *Macworld* - the colour accuracy of ads takes presidence over editorial. Most of our ads are supplied as film, containing who knows what profiles. If the printer decides to tweak-up the magenta on an ad to improve it, then the colour consistency on editorial pages will suffer Unless CPX becomes the print-industry standard, there's little you can do about

# Macworld's buying advice

Colour management can make your head ache and eyes water - especially when cost is mentioned. However, CPX comes as close to the Holy Grail of WYSIWIYG as I've seen. Using paper-stock-based profiles makes perfect sense in theory and practice. All this for £575? You can't really go wrong.

Sean Ashcroft



### In profile The Colornerfexion CMYK colour

profiles give excellent results when poor CMYK images are adjusted using Auto in Curves. Compare the result of the bottom picture with the middle picture - which were both Auto-converted from the same terrible nicture (above) The bottom pic was converted with CPX's Offset B profile selected, but the middle picture was corrected with the Euroscale Coated CMYK profile selected.





# Colour spaces explained

A II colour profiles are defined by colour-space. A colour space is a model of up to four dimensions that represents colour in terms of intensity values. They also specify how colour information is represented.

The largest colour space is that perceived by the human eye. This has been formalized in several ways by CIE (See "Colour organizations").

About half the size of this colour space is the RGB space. Any colour expressed in RGB space is a mixture of three primary colours: red, green, and blue. All digital workflows make use of the RGB colour space. For

example, scanners read the amounts of red, green, and blue light reflected from an image and then convert those amounts into digital values. Computer convert them back into red, green, and blue light

The RGB colour space is usually represented on a three-dimensional axis in the form of a cube. Colours are defined in terms of three co-ordinates, giving them a specific location within the cube.

Understanding the RGB colour space is important to printing. because it is the native digital colourspace used to represent on-screen documents that will end up in print. RGR colours are also known

as luminous, or additive, colours. This displays receive the digital values and is because black is displayed on a TV or computer screen by removing all three sources of colour, while white is displayed by adding maximum amounts of all three colours.

But because the range of RGB colours is so vast, many of them are not achievable in print as process colours – and this is where the

CMYK colour space comes in. The CMYK colour space consists of Cyan, Magenta and Yellow, as

primary colours and red, green. and blue as secondary colours. In theory, the black shouldn't be needed, because an equal mix of C. M and Y gives black. However. when printed, the result is closer to dark brown

The CMYK colour space is subtractive - if you start with white and subtract all colours equally, you get black.

CMYK colours are also called reflective, because the inks filter light as it is reflected off the paper, allowing only certain wavelengths of light to reach your eyes.



Star Rating: ★★★★★/9.2

ewlett-Packard has been rolling out its new range of printers for the past year. The 990Cxi is the top-of-the-range inkjet from HPs consumer range. It includes just about every Epson-challenging feature that HP has in its armoury — from automatic paper-type detection, to wireless printing from cameras and PDAs. And, the 990Cxi's image quality is impressive.

The look of the 990Cxi is much the same as the rest of the range, though there is no special silver model, like there is with 930Cxi Macintosh Edition.

The 990Cxi is bigger than the 930Cxi due to larger paper tray and duplex unit. However, it doesn't make much difference to the desk space needed.

It has a number of features that make it better than its smaller sibling and give the Epson designers something to think about.

The first, and my favourite, feature is the automatic paper-type detection. Figuring out the right type of paper to use for different levels of print quality can be a nightmare — the 990Cxi takes all this away from the user. It has an optical detector that looks at the paper and tells the printer driver which type is present. This even works with non-HP papers.

The other bugbear of owning a colour inkjet is aligning the heads. To make sure you get the best colour, you sometimes need to align print heads by printing a series of test prints and telling the printer which is best. The 990Cxi can do its own

VD-RAM arrived on the scene

about DVD standards. Now that DVD-

Video is taking off in the UK, this may

The first DVD-RAM drive back then

serve to confuse things even more.

was from LaCie. Now the format has

doubled in capacity, and LaCie is again

a couple of years ago - slap-bang

in the middle of a lot of confusion

alignment automatically, another bonus.

Something that's not important to many people is the ability to print on both sides of a piece of paper (duplex). However, HP has included it for those that need it

Another
feature that HP has
added to the 990Cxi is
the ability to print via infrared
connections. Again this isn't going to be
exciting for a lot of users, but for anybody
who owns a PDA or an infrared equipped
digital camera it might be. For example,
by loading a print driver on to your Palm
or Handspring, you can print out
addresses or pictures without even
touching your printer.

The speed of the printer is mostly determined by the kind of file it's given to print. The printer's default resolution is 600dpi, which doesn't sound much – but the quality is just as good as the 2,400dpi prints it's capable of. This is down to HP's PhotoRET technology, which uses layering and other tricks to improve quality without slowing the printing down.

Quality is always the main selling point of a printer, and in the past Epson has always won this battle. Not this time, though. The print quality of the 990Cxi is

excellent. It doesn't just print high-quality images, it makes it easy for everyone to do so. It does this with a combination of great driver software and intelligent hardware. The end result is close to Epson's best — in fact in a Bush-Gore type of way, it's a close call. Although print quality is evenly matched, the ease of use gives HP the edge.

# Macworld's buying advice

If you are looking for an A4 colour-inkjet printer, you won't go far wrong with the 990Cxi. If you weigh up the features and the print quality, it's a compelling buy. The Epson range is also capable of equally high-quality output, but for a novice the HP offers better usability. Even old hands will love not needing to select paper types, print resolutions and all the other settings required by most printers. David Fanning



Min specs: FireWire.

Price: £629: 9.4GB disk £39.

(Both prices exclude VAT.)

Star Rating: \*\*\*/8.0

the first to bring it to the Mac. The already roomy 4.7GB standard now weighs in at 9.4GB per disk, though that includes both sides of the disk. It also uses the FireWire interface for fast and simple connection.

The whole range of DVD products is bewildering. Originally DVD meant digitalvideo disc. This would have been fine,

except somebody had the bright

idea of using the disc for data. It was duly renamed digitalversatile disc, even though

most people

had already got used to the original name. Then came the flavours. DVD-ROM, the read only format, is fairly straightforward — it's like a CD-ROM on steroids. Then there were the recordable DVD standards — though "standard" is a bit of a misnomer when it comes to DVD. Add to that DVD-Audio and DVD-WORMs and you can see the mishmash of options.

# What it is

So for the record, DVD-RAM is a recordable-storage format for data. It will read most DVD discs and CDs, but you will not be able play DVD-Video from an external DVD-RAM drive. This is because the Apple DVD player doesn't recognize the DVD-RAM if it isn't Apple's own. What DVD-RAM does do is hold huge amounts of data, making it ideal for backing-up data. A 9.4GB disc stores data on both sides, so it needs to be flipped over manually. The only thing stopping drives being built with read-write abilities for both sides of the disc is price.

The problem with even the lower end

Macs shipping with a 10GB hard drive is back up. Floppies are long gone, and you would need a stack of them. Even Zip 250 disks are not up to the job of backing up anymore. Using CDs to back up is a fairly cheap way of doing it, and Jaz 2GB is convenient and quick — though expensive. There is the option of using large-format optical drives, which are also expensive but faster than the DVD-RAM. The new large format DVD-RAM is the cheapest and most convenient way to back up your hard drive.

# Macworld's buying advice

There is a huge choice for removable storage, but most are suited to moving files between computers, rather than as back up. Often the only realistic way to handle backup for machines with such huge drives is to use tape drives. However, tape drives are slow and difficult to use in comparison with DVD-RAM. DVD-RAM has reached a point where it's indispensable for both personal and network back-ups.





hampionship Manager 2000/2001 is a foray into world football of such encyclopaedic proportions that it's guaranteed to leave John Motson adjusting his pants in over-excitement.

CM 00/01 is not a major reworking of last year's 99/00 version - because there wasn't much that needed doing. What this update does offer is more of the same. There are now ten extra leagues, including those based in Wales, Ireland, and Australia. You can also manage a team in each of the 26 leagues simultaneously - but if you do, don't expect to see your loved ones again. Donning the sheepskin coat at just one club is challenge enough, because to be a successful gaffer, you have to be a master of tactics, psychology, finances and diplomacy. CM 00/01 is as close as you'll get to football management, bar taking up a seat in the dug-out.

As well as extra leagues, there are now more than 50,000 players, coaches and managers — all researched with Gestapo-like thoroughness. A special Data Editor — available online from Feral Interactive — allows users to edit the database to keep it up-to-date. It's now also possible to play random leagues peopled with computer-generated players.

The game's comprehensiveness is

# In a corner of the world where international footballing success is still a relative stranger, prior to Hairix World Cup qualification in 1974, only Cuba had provided a Caribbean dimension to carilor tournaments, with their 1938 appearance at the finals in france. Nevertheless, with their visit to West Garmany, the Haitlanc to nearly made a significant impact in football promption before alipping out of the tournament and returning to international obscurity.

# Round-up

CM 00/01 also acts as a football library, with an in-depth account of every nation's football history.



### Data day

With 50,000 real-life fact files — on everyone from Ronaldo to Wayne Dyer of Montserrat (above) — your squad can always be bolstered by bargain buys.

beyond question, and 00/01's improved Transfers functionality means you can scour any team anywhere for bargain buys. After hours of scouting, I was able to add to my squad at Wycombe Wanderers without the chairman running to the press with messages of "support". For example, Wayne Dyer – a 22-year-old ex-Stevenage midfielder playing for Montserrat – was a snip at £25,000. Thing is, when his pay demands spiralled, I had to let him go. It's this attention to detail that makes CM so involving.

Before a ball is even booted in anger, there's the pre-season preparation to consider. Off the pitch, CM 00/01 is more controllable than ever, because you can now interact with the bootroom boys. To help with team selection, go to the physio, coach and assistant manager for up-to-the-minute reports on any player. You can also relieve your assistant of his reserve-squad duties, as well as promote reserve team players to the senior squad.

Player profiles are much more detailed, providing a breakdown of their skill at all aspects of the game, as well as ratings on how fit and happy they are. This is invaluable when making team and tactics decisions from game to game. If, for example, your opposition is playing with attacking wing backs, you can choose two wide men with big engines and an extra yard of space in their heads. Likewise, if the game looks like it'll be a midfield tussle, then turn to the player profiles to shore-up your centre with a couple of piano carriers.

There's no doubting that picking up pots is more difficult in CM 00/01 — unless you start with the top Premiership sides. It was only after much manmanagement, transfer wheeler-dealing and tactical tinkering that I managed to

wring some results from my squad of journeymen and hungry youngsters.

As if this isn't tough enough, you also now face a baying media pack – including hacks from football Web sites. But watch your mouth – as one word out of place can mean headlines that irk fan and player alike. This is a nice touch.

On the pitch, gameplay is better, with more-detailed match commentary. During crunch clashes, things can get really tense. However, the game could do with a real-life Motty to replace the Stephen Hawkins drone of whichever Mac OS voice you have selected.

There are other niggles, too. One is the PDF-only manual — which explains what everything does, but without saying where anything is. Because the interface is unintuitive, this will doom newcomers to hours of familiarization before donning the tracksuit. The delay between games is also frustrating, with screens of meaningless results keeping you from the action.

# Macworld's buying advice

For £24.99 you wouldn't expect a football-management game to spank a donkey's arse with a banjo. Not only does it spank said rear, but 00/01 leaves the mule braying in pain.

Sean Ashcroft



# Stiff competition

A new feature in CM 00/01 is the complete range of world, domestic and international competitions.

# Catch the coach

Detailed reports from your backroom staff are available in CM 00/01, helping with team selection and tactics — and you can give players any nickname you please.







### Wash when you like

Each wash option is accessible from the main panel. You can set when the AutoWash should occur - for example at Startup and Shutdown, or by time period.

# Tri-cvcle

The MacWasher cycle is fast, and the progress bar shows exactly what stage the cleaning has got to. A Simulation option is also available

here has been an incredible amount of coverage in the media over the past year concerning personalinformation security on the Internet. Not only were there concerns about privacy, but also how secure personal details are during day-to-day use of a computer. WebRoots' MacWasher is just one of several tools that cleans out files that can compromise privacy

The first security issue is the safety of your personal details while using the Internet or other network. The second arises if you share a workstation with someone else in your company. MacWasher will seek out and delete or overwrite - potentially dangerous files.

### Cached files

Every time you log on to a Web page, your browser gathers lots of tiny files that are hidden on your computer. Examples of these are cookies and cached files. Not only can these files clog up a computer, but they can also reveal which Web sites you've visited.

There're some instances, especially at work, when this sort of info can be discovered, tracked and possibly abused by others. For example, anyone who uses online-banking facilities should be aware that checking an account online via a shared computer can be pretty dicey especially if you forget to log out of the site properly, or don't clear your browser cache. This can leave the door wide open for someone else to get back into your private account. Most online-banking sites provide full instructions on how to avoid any unwanted access, but MacWasher offers a fast and thorough route to avoiding any nasty surprises in your next statement.

There are quite a few utilities that take the tedium out of rummaging around for files, but MacWasher offers more than just the ability to flush out these files manually every so often. Webroot claims MacWasher is a unique Internet-privacy tool, with more features than any other Web or file cleaner on the market, and it supports all the latest browsers. It will clean up the browser cache, your recent-documents files, recent applications, temporary-files folder, trash, AOL tracks and history.



### Identity crises

It's useful to be able to keep some cookies. especially cookies that store the User ID and password for Web sites that require one time registration. Although keeping these will still allow others to log on under your identity.

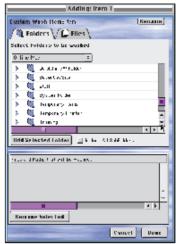
Installing MacWasher is quick and simple, and there is also an Uninstall option. The user interface could be prettier, but it's easy to understand.

Before washing a Mac for the first time, it's advisable to go through all the options available so you keep the cookies you need for logging into your favourite sites. If you've never cleaned out your cookies before, you may find that there are loads of files to scroll through. It would be useful if this cleaning feature offered more information about each washable file as you select it. You must make the decision on whether to keep the cookie, or wash it off your Mac completely. Fortunately, you can simulate a wash before launching the real thing.

You can simulate a wash before performing the real thing. A simulated wash runs through the process of washing without actually deleting any files, letting you configure the setup beforehand. MacWasher also tells you how many files have been deleted, and how much disk space has been recovered.

MacWasher can also "bleach" files, which means it overwrites the file a set number of times with random characters. This prevents the file from being recovered by a different application.

The preferences in MacWasher can be set to either automatically wash all the files it recommends, or schedule it to AutoWash at a certain time of day. You can also choose to build your own custom



### Data disaster

Be careful when you set up a custom wash, as this tool is intended for advanced users - it's easy to delete files you actually need.

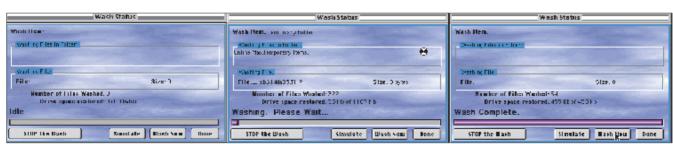
wash cycle, which is a more streamlined option than a normal wash. Be warned. it's easy to forget to keep cookies. Accidentally clearing cookies from your browser can mean re-registering with sites that require a user ID and password.

Setting MacWasher to automatically clear your cache is a good idea. This is because you then know for certain that you are receiving the very latest information from a server, and that your browser isn't "lying" by displaying out-of-date content. A browser's cache works by storing graphics and pages on the hard drive, and therefore speeding up Web browsing as there's no need to repeatedly download the same data again and again. However, as with the History log in Explorer, this storing of sites can allow others to track your Web use.

# Macworld's buying advice

If you're worried about privacy, or just want to avoid possible embarrassment at work, then MacWasher is a good buy - if only to put your mind at rest. MacWasher will certainly save you the trouble of trawling through, possibly, hundreds of different files in different applications and deleting them individually every day.

Gillian Thompson





Wireless ISDN hack

# AirShuttle

Manufacturer: Hermstedt (020 7421 1500) www.hermstedt.co.uk

**Pros:** This is the only solution for wireless ISDN.

**Cons:** The second channel version is not available just yet.

Min specs: AirPort base station and an AirPort Card; ISDN line. Price: £149 to upgrade an existing

AirPort; £333 for a upgraded
Airport. (Both prices exclude VAT)
Star Rating: \*\*\*\*/7.5

hen Apple announced its
AirPort wireless-networking
products, the crowd, at 1999's
New York Macworld Expo went wild.
With one exception, a person who I
happened to be sitting near. It was Andy
Eakins, the head of Hermstedt UK. His
concern was that the AirPort had ethernet
and modem connections, but no provision
for ISDN. He immediately vowed to fix
this, and I thought no more about it.

After almost a year and a half of gestation, the AirShuttle was born. It took so long for several reasons. The first issue was the fact the AirPort isn't designed to

have ISDN, nor, secondly, is it meant to be taken apart and rebuilt by German engineers. However, that is exactly what has happened. Owners of the current AirPort can buy the upgrade to AirShuttle, which is fitted by Hermstedt engineers. This obviously leaves your Apple warranty in tatters, but Hermstedt takes up the slack and offers a full warranty covering both the AirPort and the AirShuttle.

The AirShuttle is an unusual product, basically a hardware hack that adds to the ability of an Apple product. This is bound to make people nervous, but if anybody knows ISDN, it's Hermstedt. There is no need to buy an AirPort to send it to Hermstedt for the upgrade, as there are upgraded Airports available too.

Using the AirShuttle is as invisible and seamless as the original AirPort. Getting onto the Internet is as simple as before, and the modem speed is drastically improved. The original 56K modem can manage only 50K at best, and is often reduced to somewhere between 40 and 50K. ISDN, however, offers 64K every time with connection taking under five seconds. This may not sound like much of an improvement, but the difference is noticeable.

Unlike many ISDN adaptors, the AirShuttle has a only single channel.

This is a problem because it misses out on really fast 128K performance. It looks like Hermstedt may add a second channel to future models, so this might be a temporary limitation. It may not affect everybody though, because using both channels costs twice as much.

# Macworld's buying advice

I have been using ISDN at home for a couple of years now, and, a recent temporary downgrade to a modem was a frightening reminder of how slow the Internet can be. If you have a Cube - or perhaps an iBook - in your minimalist home, an AirPort is a must-have item. But if the luxury of being wireless is important to you, surely a fast connection is equally important. It's a hack, but one made for public consumption. Hermstedt takes all the risk associated

with turbo-charging

makes it easier for

the average Joe to

get in on the action.

hardware. This

**David Fanning** 

hardware hack that makes Apple's
AirPort ISDN capable. It also
supports the AirPort compatible
Orinoco base station from Lucent.

Cort
Liry

Shuttle launch

Hermsted's AirShuttle has been

over a vear in the planning. It's a

mportant to

Portable-to-mobile phone solution

# USB SoftGSM

Manufacturer:: SoftGSM

(01959 578 311) www.softgsm.com

**Pros**: Easy to set up; gets mobile users online.

**Cons:** Set up can be confused by different mobile operators treatment of data traffic on their networks.

Min specs: USB; Mac OS 9.0 or later. Price: £85 (excluding VAT).

Star Rating:  $\star\star\star\star/7.2$ 

wedish IT company Micro
Systemation has developed
SoftGSM, a software-based
GSM (Global System for Mobile
communication) solution that connects
Macs to the Web using mobile phones.

With SoftGSM it's possible to browse the Internet, and send and receive emails using a USB connection and any compatible mobile phone. It's also a welcome solution for iBook users, like myself – who have USB and ethernet ports, but lack any kind of mobile connection.

The package contains the SoftGSM software installer and a cable – you

provide the phone. I used a Nokia 7110e for the testing, but SoftGSM also supports phones from Ericsson, Siemens and Motorola. Different manufacturers use different connection ports on their mobiles, so it's essential to ensure that the correct kit for the correct brand and model of phone are ordered when purchasing SoftGSM.

The next hurdle is your GSM network supplier. I used Orange for this test. I had to contact the company and request a SIM update for my phone to make it data-capable. Without the update the connection will be terminated as soon as the network realizes your making a data call. It's worth contacting your network supplier before you buy to confirm it supports data traffic.

After instalation, you must adjust settings in the Modem Control Panel – select SoftGSM as both the Modem and as the Connect By method here.

Now all you need do is open up Remote Access, hit connect and you'll be online in seconds.

Expect maximum speeds of 9,600bps, as this is the ceiling for mobile data traffic in the UK – though some higher-speed services are available (at a price) from some operators, for example, Orange.

Web browsing at this speed is a slow,

and costly, process, but it's possible to visit any site on the Net. Emails tend to be small data packets, so sending and receiving these is reasonably quick.

Two features available to users of the Windows versions of SoftGSM remain unavailable for the Mac. These are the Phone Book and SMS (Short Message Service) features – but SoftGSM has promised to place installers on its Web site for these services. The Phone Book will let you access and edit the data held on the phone using a Mac.

# Macworld's buying advice

The product does what it sets out to do, and is an excellent solution if you spend a lot of time travelling and need a way to maintain contact with work and home. The ability to send text messages and alter the contents of the phonebook will prove useful, but as it's unavailable now we can't be test this. Set-up is fairly cut-and-dried, and if you are a portable Mac-wielding, mobile phone-savvy person, and you need to get

solution.

Jonny Evans

this is a good

online anywhere,

# Soft way out

SoftGSM allows portable Macs to connect to the Internet using a mobile phone – though speeds are slow

are slow.



Mac-admin app

# Mac Administrator

Publisher: Hi-Resolution (01892 891 291) www.hi-resolution.com

Pros: Complete control over most aspects of the Mac; control over printing with print credits; TCP/IP compatibility.

Cons: Could be improved by adding some MP3 specific controls.

Min specs: System 7.5.3; an AFP or AFP/IP compliant server (for instance, any Mac or file server capable of hosting a Mac volume); Open Transport: AppleShare 3.7.2. Price: MacAdministrator Configuration Manager £295, 1-9 Client licence £52.50 per machine, gradually dropping to £21.95 per machine for over 1.000 licences. (All prices exclude VAT.) Star Rating: ★★★★/8.8

t isn't only educational settings that are suitable for MacAdministrator; business users can use it as a tool to stamp out both software piracy and extra curricular activities. The level of security is entirely customizable, and varies from giving users free range to a complete lock down of all activities. You can specify what applications can and can't run, where you can save files, and when people can use the system.

This all sounds impossibly complicated to set up, but it turned out to be relatively simple. Each user, or groups of users, are assigned different privileges. When they start up a machine and log in, these privileges are checked against files held on a file server. If for any reason the fileserver isn't available, then a default set of privileges is held locally. Assuming the user successfully connects to the server in the normal way, the set-up of the machine takes only seconds. Then the user is free to use any of the facilities MacAdministrator has been told to allow. It's possible to disable software loaded on a machine without deleting it. Only users with the correct privileges would be able to use the software. The same goes for Control Panels, they can be individually locked, though disabled Control Panels are made invisible

Copying files is a little more difficult to restrict but MacAdministrator can restrict individual file types being copied. So an essay written in Word can be copied, but the Word application can't



### Administrative assistant

MacAdministrator's icons make setting user limits – such as which applications can be opened and when - a straightforward task. The app could save IT professionals hours of time.

be There's also control over folders, so the users can be allowed access to their own folders and the desktop folder, but restricted from the system folder.

Access to external devices, such as printers, can be restricted. New to version 2.0 is the ability to give users print credits. This means users can print, but must limit their pages to a certain number. You can also limit the number of copies of a print. For example, a limit of three copies should be fine for most legitimate uses, but printing party invitations would be impractical. Different credit usage can be applied to different printers. This means a mono printer can be set to use a single credit, and a colour printer could be set to use two or three credits per page, to reflect the extra cost.

Another new feature of version 2.0 is the ability to use TCP/IP. This both speeds network activity, and makes MacAdministrator better for use in crossplatform environments. Some educational establishments are even trying to phase out AppleTalk altogether so TCP/IP

compatibility is becoming essential.

MacAdministrator is also capable of controlling, restricting or logging most aspects of Mac use. It isn't so much a complex program, as a big program. The number of options are legion, and an administrator has the choice of getting right down to the nitty gritty, or controlling options in groups. This application can save administrators hours of work.

# Macworld's buying advice.

MacAdministrator is currently the best and only option for IT people to keep tabs on school or university computers. However, it has just as many uses in the business world. It's the only reliable solution for keeping computer users on the straight and narrow. It's part of an IT managers job to do everything possible to prevent software piracy, and this is an excellent tool to assist that aim. Any company that is serious about software policy needs this software.

**David Fanning** 



Mobile Publisher: FileMaker (0845 603 9100) www.filemaker.co.uk

Pros: Fully compatible with FileMaker Pro 5: can be globally searched using the Palm OS Find utility. Cons: Only 20 fields are allowed: must be used with FileMaker Pro 5. Min specs: Mac OS 8.1; 32MB system RAM; FileMaker Pro 5.0.3; Palm Desktop 2.5,

Price: £39.95 (excluding VAT) Star Rating: ★★★★/7.4

Palm OS 3 1

ileMaker 5 Pro is well respected in the business world. It's renowned for its ease of use, interface versatility and the choice it offers in creating un-intimidating front-ends.

If your business depends on a FileMaker database, perhaps to track sales, being able to arm salesman in the field with the company's most valuable info is surely appealing. And now, there's FileMaker's Mobile to do just that.

The Mobile application - which only works with Macs that have FileMaker Pro 5 installed – allows you to perform basic database operations on the files that you have transferred onto the PDA, which occurs during normal HotSync. Configuring the files to transfer is straight forward, but you can't just dump an entire database onto the Visor.

Special settings must be specified for each file you wish to transfer. Each field that you want has to be selected - you are limited to 20 fields per record - and the configuration governs the appearance of the records on your PDA. If you have a

coloured front-end, don't expect to see this on the handheld - records are displayed as a list of fields, reminiscent of the Palm OS's own Address Book. These appear with the defined field-name rather than the label that shows in the normal front-end, which can be confusing if the database has several duplicated fields. The order in which you select fields is the order they'll appear in though this can be reorganized within the Settings dialogue, as long as the list doesn't extend beyond the bottom of the viewing area. String and number fields less than 2K are portable to the PDA – any field larger than this and the entire record will not be transferred.

The usefulness of the Mobile companion seems limited. Inventories of products, logs of transactions, sales histories, etc, would be fine as long as each was no longer than 19 fields - you have to save one field at least for a record ID of some form. These limitations are compounded by the dependence on FileMaker Pro with its own failings.



# Macworld's buying advice

If you already depend on FileMaker Pro, and there is a database with only 20 useful fields you'd like to carry with you, then the Mobile companion will do the job. However, it's best suited to databases built specifically for FileMaker Mobile. If this is the case, then FileMaker Mobile does the best it can with the restrictions of the Palm OS

Seth Havens



Min specs: Graphics card; USB

Price: £2,190 (excluding VAT)

Star Rating: ★★★★/7.0

f you're a graphic artist who's fed up with the mouse, and who's never quite got the hang of using a pen tablet, take a look at Wacom's new PL500 — a 15-inch LCD that you can draw or paint on with a pressure-sensitive stylus. It's unique, but it's expensive for what it is.

The PL500 is only about 2-inches thick and weighs a mere 10lbs (4.5kg). It uses USB for the graphics-tablet functions and DVI for the display — so it works only with certain G4 Power Macs. The newest Macs that sport Apple's new ADC connection are not compatible without a third-party card. For most Macs, it requires a digital video card,

such as the £159 VoodooMac 4500 (3dfx, 01753 502 800, www.3dfx.com). Priced at £2,190, the PL500 requires a hefty bank account. Wacom also offers the £1,899 PL400, which has a 13.3-inch screen.

The PL500 is larger than Wacom's other LCD tablets, and it offers a better image — it's the first of Wacom's PL line to offer a 24-bit LCD, for millions of colours. It's also brighter than previous models, and it has better contrast.

Drawing on the PL500 takes some getting used to. Because the tablet surface is a fraction of an inch above the LCD screen, the tip of your stylus doesn't actually touch the on-screen image. Simply put, it feels a little odd. If you expect using the PL500 to be like drawing on paper, you'll be disappointed.

The PL500 ships with a standard Wacom pen that supports 256 levels of pressure – the more levels of pressure a pen can sense, the smoother the curves and gradations between shades of grey it can produce. A rocker switch by the nib has two programmable buttons for quickly issuing commands, such as Save.

The pen can also simulate a pencil, since it has an eraser on the end. You can opt to set the eraser as a brush or any other tool, and just like the pen tip, the eraser is pressure sensitive. It's a little curious though, that Wacom didn't



choose to include one of its Intuos pens, which support 1,024 levels of pressure and a host of other features.

# Macworld's buving advice

The PL500 might seem to be a bit of a luxury, since drawing and painting with a regular Wacom tablet is relatively easy, and most high-end tablets ship with more-sensitive pens. But, if you need an intuitive, easy-to-use interface for a kiosk or presentation, the PL500 might be well worth its price.

Ben Long

legitimate users.

Electric canvas

The PL500 is an LCD monitor with an embedded tablet.



Automatic restarter

# Kick-off!

Publisher: Sophisticated Circuits
www.sophisticatedcircuits.com
Distributor: Alta Technology
(020 7622 6606)
Pros: Peace of mind.
Cons: Inadequate logging.

Min specs: USB.

Price: £179 (excluding VAT)

Star Rating: \*\*\*/7.8

ometimes Macs crash. It's a fact of life, and there isn't much you can do about it. With luck Mac OS X will reduce crashes, but they'll still happen. They're a pain, but when it's a server that crashes, it can be even worse. It could mean a Web site is down, or a remote access is disconnected — conceivably until somebody gets back to the office. This can be damaging to a companies reputation — and bank balance.

Sophisticated Circuits now has a widget that can act as a night watchman, making sure that a server never hangs indefinitely. It looks if everything is running correctly, and, if it isn't, it will restart the machine so that it will be.

The package consists of hardware, a Kick-off! power cable with a USB connection, and software to control it. The Kick-off! power cable connects to the power input of the Mac; the original power cable plugs into the back of that. The USB cable plugs into your USB port, and that controls the restart function.

The software is a Control Panel and couldn't be simpler to use. The first panel gives options to monitor for system crashes. If the system doesn't respond for a set amount of time — anything from 1 minute to 60 minutes — the system will restart. In case of a crash while starting, Kick-off! will allow a set amount of time to complete the restart. If after that time the system is still not responding, Kick-off! will restart the machine again.

Sometimes, an application will crash without bringing the whole system down. In this case, Kick-off! will attempt to restart the application. If that doesn't work, then it will initiate a restart of the machine. When the machine has restarted, Kick-off! can then boot any applications that were running when it shut down. This is great for when a server is running a number of anns.

Sometimes a machine needs restarting just to reset connections.

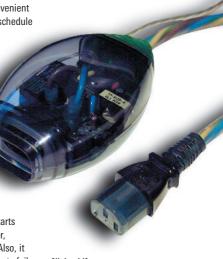
For example, email servers can fall victim to hopeful spammers that leave connections open for days to bounce emails to their prey. Often the only way to break these connections is to restart the machine, though this is inconvenient during work hours. Kick-off! can schedule restarts to happen overnight, keeping the server free of spammers without inconveniencing the

There's a limit
to how many
retries Kick-off!
will attempt – the
maximum is five. Call
me a pessimist, but I
'd have it try more than
that. Also, the logging
feature is not quite as detailed
as it should be. It doesn't log restarts
or shutdowns initiated by the user,
which would be handy to know. Also, it
doesn't keep a log if restart attempts fail.

# Macworld's buying advice

If you need a machine that's on 24 hours-a-day, I recommend this product. It can save a midnight trip to the office to restart a computer.

**David Fanning** 



### Night shift

Kick-off! will automatically restart a server when it crashes, saving any midnight dashes to the office. It can also set an email server to restart every evening, preventing spammers from bouncing emails off it.



Digital-audio editor

# BIAS Peak

Publisher: BIAS www.bias-inc.com Pros: Multiple undos allow actions to be undone sequentially, while Edits lets actions be undone from a history list.

Cons: When I accidentally inserted a mono TDM plug-in on a stereo track Peak crashed

Min specs: PowerPC; 64MB RAM; Sound Manager version 3.3 or later; System 7.6.1 or later: QuickTime PowerPlug. Price: £549 (including VAT) Star Rating: ★★★★/8.2

Amplitude Fit... Change Duration... Change Gain... Change Pitch... Convert Sample Rate... Convolve Crossfade Loop... Dither ... Invert Fade In Fade Out

### Clear signal

There is a wide range of signalprocessing commands in Peak.

IAS Peak is an advanced audioapplication designed to provide professional tools for editing and processing digital audio. Peak makes a superb addition to multitrackaudio applications, such as Digidesign's Pro Tools. It also offers advanced samplersupport, and works directly with many popular MIDI sampling keyboards and rack-mount samplers

You can create audio CDs directly from a Peak Playlist using Adaptec Toast - which is bundled with Peak or create full Red Book standard reference CDs using Adaptec Jam or Digidesign MasterList CD software. You can also use Peak 's RealAudio, Shockwave Audio Encoder, and MP3 encoding to prepare audio for streaming over the Internet.

Other packages, such as Pro Tools or Logic Audio, are optimized for multitrack operation along with MIDI sequencing, while Peak is optimized for stereo or mono operations. So you do your multitrack work in one of these other packages, mix down to stereo, and do your final editing and processing in Peak prior to burning to CD. Peak is also useful for working on mono or stereo files at stages during the multitracking process. For example, Peak offers sophisticated tools for looping, including Loop Surfer, Loop Tuner, and Guess Tempo.

The big news is the support for VSTcompatible plug-ins, which are becoming



### Peak performance

BIAS Peak works with advanced TDM plug-ins, such as the Megaverb's, shown here, for creating reverbs.

a major format. Peak also supports Adobe Premiere-compatible plug-ins, but these are losing ground as a format for audio and music. The TDM edition of Peak supports Digidesign TDM and AudioSuite plug-ins, providing access to the wide range of high-end plug-ins developed for Pro Tools systems.

To achieve certain effects, you may need to combine two or more plug-ins. You can insert up to five VST or TDM plug-ins to process audio, and you can use both VST and TDM plug-ins at the same time. It's even possible to add an AudioSuite and a Premiere plug-in as well - for ultimate plug-in flexibility.

Peak's user-interface has been given a makeover, and is better for it. I particularly liked the snazzy new toolbar. Here, the tools reveal their purpose when

you hover the mouse over any particular icon, and you can choose which selection of commands you want to have on the toolbar. Technical enhancements include support for a wider range of third-party SCSI cards and samplers, the addition of dithering capabilities, improvements to the Guess Tempo feature, the metering, and so forth.

# Macworld's buying advice

The only real competition for Peak is TC|Works Spark. Peak has been around a year or two longer, although Spark is catching up fast and has some unique features. The improved user-interface in Peak 2.5 gives this package the edge for me when it comes to serious professional work

Mike Collins





ce cream dribbling down their lips queuing for the park's latest attraction - recently developed by the best scientists available - the kids were ready for the last ride. This was the big one.

Theme Park World is like a stay-athome microcosm of what managing the Millennium Dome might be like if people went there. As a simulation it's at once entertaining and annoying. Just when you think you have that subtle little entertainment mix, an attraction breaks down, and, like ice in a hot tub, the magic melts.

Despite appearances, it's not easy being the ringmaster of a fantasy circus. Rubbish builds up; fashions and seasons change. Who wants to ride the Big Dipper in a thunderstorm? You've got to plan ahead. You need to keep looking forward, invest in research, and maintain the shock of the new

Like every sim game I've ever played, the interface is easy, first time - but never trust a first impression. Every decision you make leads to another. As an armchair Svengali, approaching



If you want to, Theme Park World lets you skimp on the rides - rollercoasters don't just look dangerous.

perfection, I found myself drilling deeper and deeper into the micro-management screens. The death of the Aztec Ride creates a queue - send in the entertainers and get some security there.

As God games go, this tiny slice of reality takes as much energy as you want to give it. Like all the best obsessions, Theme Park World offers layer after layer of micro-controls. So many decisions -

without (much) of a safety net. The game includes an advisor, but like every trainee manager, you know that you know best. It gets deep, and for that reason the PC version has already sold more than a million copies.

You can take the kind of interest in your punters most marketing types dream of, click on them and see what they are feeling. You can do the same with staff, rides, and stalls. Everything is adjustable as you push the Park toward perfection. Like Sim City or The Sims, this game is capable of taking over all your free time.

# Macworld's buying advice

It's a challenging game, ideal for those with so little to do that domestic chores seem like an excellent idea. It's online features - the ability to chat and publish parks online - give this game a chance of developing a huge Internet-based community. Theme Park World should carry a health warning - you'll spend more time entertaining the park's visitors than your friends, lovers, family or children.

Jonny Evans



f you're a creative professional working in a mixed platform environment, chances are you've had to occasionally use a Windows PC. Often Windows is the only way to view email attachments, access certain Internet Service Providers, and take advantage of other Windows-only office packages — such as Microsoft Access.

Using Virtual PC 4, Connectix's latest release of their flagship emulation software, it's possible to run a wide selection of Windows software and hardware with speed and stability, all on a Mac. This gives the best of both worlds at a fraction of the cost of any hardware-based Windows solution.

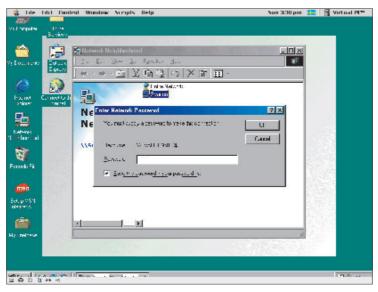
# Pentium standard

Virtual PC has been around since late 1997, and was one of the first Windows PC emulators for the Macintosh to support all the hardware functions of a standard MMX Pentium-based PC. It achieves this by making a PowerPC pretend to be a Pentium.

Virtual PC boasts features such as the ability to transparently use Windowsnetworking protocols with full ethernet support – including Novell NetWare (IPX), TCP/IP, Microsoft Networking (NETBUI), and Microsoft Remote Access Service (RAS). Also, users can enjoy full drag-8-drop support of text and graphics between the two platforms, and take advantage of hot-swappable USB devices that don't yet have Macintosh drivers.

While the previous version of Virtual PC supported a maximum memory allocation of up to 128MB RAM, the latest release supports up to 512MB RAM, enough for most requirements. Combined with major improvements made to the core CPU emulator, and the all-new multimedia features, Connectix claims this latest release is twice as fast as the previous versions.

Launching windows, opening folders and browsing the Web using the shared IP are now a lot more responsive.



### Connection cross-over

With Connectix's Virtual PC 4, you can access Windows only networks – such as Novell Netware and Microsoft Networking – using its built-in networking features.

Applications such as Microsoft Access databases run faster, and when using memory and CPU intensive applications – such as Web servers and middleware apps – on an iMac DV with 384MB RAM and Mac OS 9.04, Virtual PC 4 is surprisingly fast and stable.

Among the newly added features is the expandability of the Windows disk-image. When you create a PC hard drive and you're using Mac OS 9, the drive expands as needed (up to 127GB), and best of all, it uses only the space it actually requires.

Yet another feature is the ability to run multiple PC operating systems — provided you have the installation disks to install them alongside the pre-installed and pre-configured Win 98. It supports anything from Red Hat Linux to Windows NT/2000 — Windows 2000 server will run, but is not recommended. These systems are viewed as familiar Mac thumbnails and can be toggled between.

# Restart rethink

Another clever time-saving feature is the ability to pause, shutdown or restart these virtual machines without restarting the host operating system.

Virtual PC 4 doesn't include a
Windows 98 installation disc. This could
prove a bit problematic, and will almost
certainly annoy first time Windows users.
The disc is required anytime you want
to update the installed system-software
where it requires changes made to the
PC's database of drivers. In my case,
I needed a new networking service,
which was not part of the pre-configured
Windows 98.

To get the most out of Virtual PC, you'll need a high-spec machine with plenty of memory — at least 128MB — running Mac OS 9.0.4. One other feature to note is the enhanced support for the Velocity Engine, providing even better performance on G4s when running graphics and multimedia applications.

# Macworld's buying advice

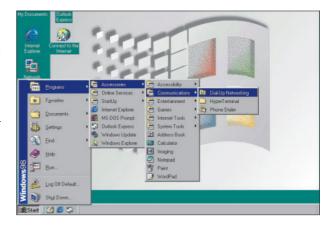
Using Virtual PC 4, Mac creative professionals can test HTML pages, hybrid CD-ROM disk images, access Windows only ISPs, view Windows email attachments, connect to Microsoft networks and more.

Virtual PC 4's low memory requirement, familiar Macintosh interface, new features, and improved speed and stability make it an ideal solution for Mac users wishing to take advantage of Windows applications and features at an affordable price.

# **Johan Lopes**

# Speedier performance

The launching of Windows, opening of folders and browsing the Web using the shared IP are a lot more responsive than in previous versions of Virtual PC.





# Macworld Games Hall of Fame

If 2000 was fun, 2001's going to be better. By Andy Ihnatko and Christopher Breen

eeper and deeper stretch the marbled hallways and galleries of the Macworld Game Hall of Fame. With the new year come throngs of people to gaze upon the gaming industry's past and current glories. The school kids here on field trips seek only basic amusement and a change from the daily drudgery of class. The students are little better – take that young man in the Foo Fighters T-shirt examining the Zork Trilogy diorama, for instance: he stands in front of one of the most influential immersive realities in the history of the genre. But I can tell by his posture that he's just desperately trying to come up with a thesis project and to avoid flunking out of his degree.

Of course, such people are a valued source of sustaining revenue, but we don't operate the Hall for them. We do it for the Cub Scout who gets separated from his troop because he can't tear himself away from the Galaxian fresco, which puts him in mind of the Duke Nukem historical re-enactment he earlier saw staged in the atrium.

Some games we hoped to see this year – games that have been bowling people over in beta form – are missing. We are as proud of 2000's inductees as we are of any others. But with little exception, the 2000 games' accomplishments were evolutionary ones: great games made greater, or familiar ideas with modern execution. However, 2001 promises to shake things up: revolution is coming (see "Next year's contenders" for details).

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## Meddle in every detail

The Sims will prepare you for the day when you have an adult daughter.



# **Best Simulation game**

# The Sims

Andy: The phone rings at 9:30 a.m. The only people who phone me at that ungodly hour are dental assistants reminding me of an appointment or friends at work whose computers are acting naughty. I pick up and I hear, "Andy! It's John! I got a crisis here! I finished my Three's Company Sims house, and just as I finally got Jack Tripper a restaurant job, my Mac froze up on me! What do I do?"

I am tempted to say "Get a real life instead of a Simmed one." but instead I advise him that if the mouse still works. he should just wait it out. Ignoring John's excited blabbering about creating a house for the Ropers next, I hang up and go back to sleep.

It's real life, only fake. Control the life of a semiautonomous Simmed human - how he or she lives. socializes, eats, works, plays, and everything else - with success or failure metered by your Sim's overall happiness and sense of self-worth. It's finally out for the Mac and infecting player after player.

**Chris:** Count me among the infected whose Sim leads a far more fascinating and productive life than his creator.

What's cool: Indifferently wielding the power to control the basic happiness of another human

Who it's for: Folks being "Simmed" by their bosses.

Reviewed: October 2000

From: Aspyr Media, www.aspyr.com; Softline, 01883 745 111. Price: £39.99 (inc. VAT)

# **Best Traditional Game**

# Scrabble

Chris: Many years ago, within the pages of The Macintosh Bible Guide to Games (Peachpit Press, 1996), I made the bold pronouncement that Brian Sheppard's Maven was the best Scrabble simulation available on the Mac. My mistake.

I should have suggested that Maven was the best Scrabble simulation available on any computer platform. If not, why would Hasbro Entertainment incorporate Mr Sheppard's Maven engine into its own outstanding version of the traditional word game?

Now, that version of Scrabble has been brought to the Macintosh by MacSoft, and it's a winner. All the elements you'd expect from Scrabble on a Mac are here: the crosshatched board, the salmon-pink Double Word Score Blow up everything squares, seating for as many as four players (comprising both computer and human opponents), a cagey computer



What's an eight-letter word for family fun? S-C-R-A-B-B-L-E!

adversary, "mini-games" to hone your wordplay, and the ability to dabble at Scrabble with others over a LAN or the

If you're seeking a great gift for someone with a new iMac, look no further than Scrabble.

Andy: It's easy to laugh at the idea of applying graphics, sound, and animation to a board game as static as Scrabble - at least in Monopoly you can go "vroom-vroom!" when you move the little car around the board – but this Scrabble takes play to another level

What's cool: A great-looking Scrabble simulation that even the most seasoned wordsmith will find difficult to beat.

Who it's for: Scrabble and traditional-games enthusiasts.

From: MacSoft, www.wizworks.com/macsoft;

Softline 01883 745 111 Price: £29.99 (inc. VAT)

# **Best Arcade Game**

# Asteroids

Andy: What could possibly be superlative about a new edition of a Reagan-era game?

Well, sure, it's been kicked up with Y2K sensibilities. While the original was a model of vector-based minimalism, this one has an audio track, fully rendered scenes between levels, and 3D animation.

But it's still Asteroids – which is to say, though they've expanded the game play with more-sophisticated higher levels, they haven't ruined the chimplike simplicity that's the hallmark of any great arcade game.

I don't want problem-solving, characters that I'm meant to truly feel for, or the same old Highly Experimental Powerful Weapons whose origins are shrouded in mystery.



Asteroids is just as you remember it, except the colours aren't

Just gimme a very basic premise: Your ship skates in two dimensions around the screen. Shoot asteroids and other ships. Die when you are shot or collide with something. I like the mechanisms for play to be so simple that it's chiefly a question of how fast I can route signals from my brain stem to my fingers, without getting them hung up in the tar pits of my cerebrum

Chris: If only MacSoft had found a way to import the hilarious sound effects from Ambrosia's wonderful homage to Asteroids, Maelstrom...

What's cool: It's like the Foo Fighters covering a Police song from the early eighties. There's nostalgia, sure, but enough modern credibility

Who it's for: Parents who want to be beat their nine-year-old kids at

From: MacSoft, www.wizardworks.com/macsoft/ Softline, 01883 745 111. Price: £29.99 (inc. VAT)

# Best hack-&-Slash Game

## Diablo II

\*\*\*/64

Chris: Because we engrave the Game Hall of Fame statuettes in bulk, it would be helpful if Blizzard, makers of Diablo II, released a new Mac game each year. Then we could save a few pounds by ordering an extra ten awards and scrawling "Blizzard" and an upcoming year across the bottom of each, and be done with it. Blizzard's games are that good.



# The devil made me do it

Mow down the forces of darkness in Blizzard's Diablo II. It's fun bashing dragons, and Diablo II is simple, addictive and glorious to look at.

Alas, it takes the company more than a year to give birth to games as remarkable as Diablo II. This third-personperspective game combines many of the best elements of traditional role-playing, adventure, and hack-&-slash games. As with other Blizzard titles, Diablo II is a visual and aural treat, with dramatic lighting and environmental effects and an evocative sound track. You'll appreciate that Diablo II is so easy on the eyes and ears; with the ability to choose between five different protagonists and challenge Diablo's hellish minions across four vast realms, you can easily get lost in the game for weeks on end.

Andy: Yeah, it's like Dungeons & Dragons, only targeted at people who actually like to have fun. The original left me a bit cold, but Diablo II has me hooked.

What's cool: Addictive hack-&-slash adventure.

Who it's for: The harharian within us all

Reviewed: October 2000

From: Blizzard Entertainment, www.blizzard.com; 01752 206 010

Price: £39.99 (inc. VAT)

# **Best upcoming gaming hardware: Radeon**

Andy: We knew that this award would go to a graphics card. What was tough was getting around to a decision: we just hadn't allotted enough time for running naked through the parking lot laughing. We couldn't believe we'd lived long enough through ATI's long dare-we-say monopoly on the category - to finally see a choice of manufacturers. At last, 3dfx – a Windows Godzilla – has stepped into the Mac fray. See News for more on 3dfx.



So why are we giving the honors to ATI's new Radeon card? The Radeon (which should be shipping by the time you read this) will be more influential, with the usual blessings from Apple. And thanks to ATI's long relationship with the Mac, the card will be far more integrated. In game play, 3dfx's new Voodoo 5 card kicks any body part you care to name, but ultimately it's a PC product with Mac drivers - it doesn't work with Apple's DVD player.

Chris: Had the PCI Voodoo 5 produced the same smoking frame-rates on the Mac as it does on PCs, Voodoo would be in. It didn't.

What's cool: Greater graphics power today means better game play today and intensely insane game play in a few months, when it's fully exploited.

Who it's for: Anyone interested in playing something more exciting than Scrabble.

From: ATI Technologies, www.ati.com; 01628 477 788.

Price: \$279; UK price to be announced.

# Best Shoot-'Em-Up Game

# Deus Ex

Andy: Man alive, there are a lot of walk-around-a-3D-

environment-and-shootthings games out there. But

when Deus Ex shipped, it was a sign that the glut was officially over, that from this point onward developers were not invited to ship a product unless they were willing to do something new with this category.

Deus Ex looks like other games, but beneath the surface it's more like reality. You work with a team and you learn as you go. For one, you wouldn't just pick up a

weapon and instantly know how to work it or be a crack shot with it. In Deus Ex, experience counts; but if experience isn't doing it for you, modifying the weapon might work. Here there are choices: some folks like to shoot, Aspyr Media's Deus Ex adds shoot, shoot. Others see a guard toting a shouldermounted Patriot missile and think, What the heck, let's just sneak around him and say we killed him. Either might work.

You have to shoot, but you have to think and learn and work with the other people in the scenario. What a concept. Before, you just had to look at the protagonist's cleavage. Chris: As much as I enjoy beautifully rendered shooting galleries such as Quake III and Unreal Tournament, it is refreshing to exercise both mind and trigger finger in a 3D



Feel hetter about ultraviolence Violating humanity's highest law needn't turn you into an animal intellect to injury

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Macworld FERRIJARY 2001



## Quality quests

Role-playing games return to the Mac with Baldur's Gate, inspired by Advanced Dungeons & Dragons



# Go up-diddley-up-up

Fly 2K's small-aircraft sim is so realistic, up-and-coming rock groups are advised not to play it.





What's cool: Freedom of choice and the fact that every decision

Who it's for: Shooters who want to think more, and thinkers who want to shoot more

Reviewed: October 2000. Demo available on October 2000 Macworld's cover CD

From: Aspyr Media, www.aspyr.com; Softline, 01883 745 111. Price: f39 99 (inc. VAT)

# **Best Adventure Game**

# Baldur's Gate

Chris: Just when we thought Advanced Dungeons & Dragons-style role playing games would never again grace a Mac's hard drive, Graphic Simulations brings to the Mac one of the most popular elves-spells-and-magic adventure games found on the PC: Baldur's Gate.

Baldur's Gate remains faithful enough to the old penand-paper Advanced Dungeons & Dragons (AD&D) games of yore to earn the grudging respect of traditional players. Still, it's not so choked with gothic arcana that it's likely to turn off the uninitiated. You'll find the requisite jumble of races (including human, elf, gnome, dwarf, halfling, and half-elf), classes, spells, and quests in this expansive



Rib-crushing speeds and outlandish vehicles characterize LucasArts Star

adventure. But the interface and rules are approachable enough that players entering the game's Forgotten Realms for the first time won't feel as if they'd been suddenly plunked down in Irkutsk without a phrasebook or a taste for

Baldur's Gate is good, but not perfect. Missing from the game as we go to press is network play and an update to squash its most obnoxious bugs.

**Andy:** Well, to me, role-playing games take already dull and highly technical games and remove the possibility for social interaction. If it were my kid, I'd rather he spent his time trying to become a rock drummer.

What's cool: The finest RPG to hit the Mac in years.

Who it's for: AD&D fans and those who enjoy computer questing. Reviewed: December 2000

From: Graphic Simulations, www.graphsim.com Softline, 01883 745 111.

Price: f44 99 (inc. VAT)

# **Best Flight Simulation**

## Flv 2K \*\*\*\*/8.4

Andy: Why is Fly 2K the year's Best Flight Simulation? It's just more flight-simmy than its predecessor. Sim jocks will understand the significance of that development.

Terminal Reality hit it out of the park with its initial release, but now the sim has a certain obsessivecompulsive quality that endears. You've got a working cockpit radio that lets you talk to other pilots in real time, via network. The instrumentation has also been vastly upgraded, allowing realistic simming of fly-by-instrument – which you'll need, thanks to the new engine providing realistic weather and cover conditions.

Why do people stick with flight sims? Particularly those that lack the fun of cannons and missiles? Easy: to feed the fantasy that when a hysterical flight attendant asks if there are any passengers on board who know how to fly, they can push aside the ones with actual flight experience and bring that sucker in. With Fly's new upgrades, this sim moves into the realm of credible flight training.

Chris: Fly 2K is a wonderful flight-simulation game, but I can't help wishing that Terminal Reality would market an AMRAAM/Unguided Ordnance add-on.

What's cool: Detail, detail. You're not playing... you're really

Who it's for: Air wonks who are thrilled by staring at dials for 98

From: Terminal Reality, www.terminalreality.com; Take 2, 01753 85 4444. No official UK distribution but available via select Web sites, such as www.macgold.co.uk/mac/.

Price: £34.99 (inc. VAT & shipping).

# **Best Racing Simulation**

## Star Wars: Episode 1 Racer

\*\*\*\*/9.2

Chris: With any luck, this will mark the last year we fling the garland for the Best Racing Simulation award at a game based on a non-existent mode of transportation. Don't get me wrong, Star Wars: Episode 1 Racer – with its careening pod racers, varied tracks, and imaginative opponents—is worthy of induction to the Hall. It's just that I'd like to see more bona fide. at-least-two-wheels-on-the-ground. skedaddle-your-fuel-starved-tail-into-the-pits auto-racing games come to the Mac.

That said, Racer offers nearly everything a racingsimulation fan could desire. The game includes 25 distinct tracks scattered across eight different worlds, outrageous speeds that often exceed 400mph, outstanding graphics, and three modes of play. In Tournament Play you tackle the courses in succession. In Free Play you can race on any course you've unlocked in Tournament Play. And in the networked Multiplayer Mode you race against up to eight players on a LAN

Whether you're a *Star Wars* fan or not, if you have a need for speed, Pod Racer delivers the goods.

Andy: What's wrong with fantasy vehicles? When I want reality, I've got the M1, and my Dukes of Hazzard sound track Still here's to many new racing sims next year

What's cool: Fast and furious racing action in a year largely devoid of racing of any kind

Who it's for: Racing fans and Star Wars devotees.

Reviewed: March 2000. Demo available on April 2000 Macworld's

From: LucasArts, www.lucasarts.com; no official UK distribution but available via select Web sites, such as www.macgold.co.uk/mac/. Price: £36.99 (inc. VAT & shipping).



Explore, colonize, and dominate another world in Aspyr's Alpha Centauri.

# **Best World-Building Simulation** Sid Meier's Alpha Centauri

\*\*\*\*/8.9

**Chris:** Sid Meier is to world-building simulations what Ray Kroc (www.usnews.com/usnews/issue/991227/kroc.htm ) was to artery-clogging fast-food outlets. The creator of the Civilization franchise is either behind or has indirectly influenced the design of dozens of these explore-colonizebuild-and-bend-your-neighbours-to-your-will games.

Alpha Centauri, this year's winner for best worldbuilder, is the sequel to Meier's Civilization II. In this game, the colonists who left their terrestrial home at the conclusion of Civ II have arrived on an alien planet. During the journey the erstwhile earthlings have split into seven groups with differing ideologies. Your job is to lead the exploration and domination of your newfound home.

While Alpha Centauri maintains many of the elements

# **Next year's contenders**



## Myst agair

Myst III: Exile will feature the kind of breathtaking graphics found in its predecessors.

pegular visitors to the Hall know that many of the games we'd proposed as and candidates for this year's awards have yet to see the light of day – Oni and Halo from Bungie (www.bungie.com) and Tribes 2 from Sierra (www.sierra.com) are among the most sorely missed. If these games are released in 2001, their names may yet adorn display cases created in their honour.

**Pedal to the metal** However, those long-awaited titles aren't the only reason to keep an eye peeled. If all goes according to plan, 2001 will be the year Macintosh racing games finally come into their own. With any luck, the budding Jeff Gordon in your family could unwrap four racing games next holiday season: Aspyr Media's Need For Speed: Porsche Unleashed; MacSoft's Driver; Pangea's (www.pangeasoft.net) Cro-Mag Rally; and Terminal Reality's (www.terminalreality.com) 4x4 Evolution – the latter two available from www.macgold.co.uk. Those who prefer air travel can look forward to United Developers' (www.uniteddevelopers.com) release of ParSoft's World War II combat flight simulation, Fighter Squadron: The Screamin' Demons Over Europe.

The eyes have it Fans of third-person-perspective action games (think Tomb Raider) will welcome Ritual Entertainment's (www.ritual.com) Heavy Metal F.A.K.K. 2. The game, featuring heroine Julie Strain, is built on the Quake III engine and is sure to be a visual treat. There's a playable demo on this month's CD.

Speaking of which, there may be no more-visually compelling game available in 2001 than Mattel Interactive's (www.myst3.com) Myst III: Exile. As with Cyan's Myst and Riven before it, Myst III: Exile features lush graphics and sound. But Myst III will provide a more immersive, 360-degree view of each scene. It's the first version not created by Cyan's Rand and Robyn Miller.

of a typical Civilization franchise, it's a more refined and flexible game than its predecessors. For example, if you'd rather not micromanage every move in the game, you can prioritize and delegate tasks to governors, who then automatically do your bidding.

Alpha Centauri is a terrific game, but if it doesn't satisfy your desire for domination, you have some options. You can buy Aspyr's \$20 Alien Crossfire add-on pack from its Web site. (Softline had no prices at press time).

Andy: It's actually the first such game I ever got into playing. I respected the others but was put off by the long time it took to get spun up for the game. I think Alpha Centauri puts you in the mood for destroying your fellow man over mineral rights with little fuss.

What's cool: Civilization in space!

Who it's for: Those with an unquenchable spirit of Manifest Destiny. Reviewed: June 2000. Demo available on April 2000 Macworld's

From: Aspyr Media, www.aspyr.com; Softline, 01883 745 111. Price: £39.99 (inc. VAT)

Macworld FERRIJARY 2001 Macworld FERRIJARY 2001



# Primal screens

Big monitors tested and rated.

By David Fanning and Seth Havens



while ago, I was at a friend's house while he was showing off his "huge" monitor – all 17 inches of it. Everyone marvelled at its size and it reminded me that most non-Mac people don't have the excuse or wallet to own a big-screen monitor. Macintosh users are more likely to have a bigger screen because they tend to use graphics applications that are greatly enhanced by the extra desktop real estate. Here, we look at the available choices for super-sized monitors.

Bigger is not always better, of course, but if you've the space, a large screen - even a cheap one - will improve how you view your work. Even though software developers are trying hard to keep floating palettes and windows to a minimum, a little extra elbowroom can save your desktop from clutter. Just having a big screen is not always enough to keep the high-end graphics and video people happy, though. If you're producing work for print, you need to be sure the colours will look the way you intended. To this end, some of the screens we tested have colour-calibration software or hardware. If colour is less critical to the kind of work you do, there are plenty of bargain screens around, some offering surprisingly good quality.

Choosing a monitor can be tough, especially if you can't see a screen in action before you buy, which is the case when buying by mail-order. When you consider how much time most of us spend looking at a computer screen, it's easy to see why researching your purchase is worthwhile.

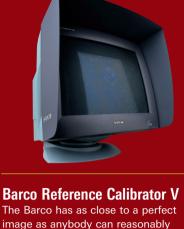
There are many ways to measure screen quality, but many of the screen statistics quoted by manufacturers are worthless.

**Dot pitch** The measurement of dot pitch relates to the distance between the dots that make up the screen image. The trouble is, there are two types of screen with at least three ways of measuring dot pitch. Whatever the type of screen, manufacturers always measure dot pitch in the most page 82 🕟 flattering way to that technology.



Design/usability

Value for money



expect. It has its own custom hardware-

calibrator, and can change every aspect

under £4,000 this screen will never be a

of quality in 25 different sectors of the

screen. It looks pretty cool, too. One

criticism is the price. At a smidgen

big seller. It is only for the absolute

Barco

£3,995

21 inches

20 inches

Shadow mask

TypeMaker

0121 604 1234

10

1,600-x-1,200 pixels at 85Hz

Hardware as standard

www.typemaker.co.uk

perfectionist

Company

Screen size

Screen type

Telenhone

Viewable size

Optimum timing

mage quality

Price

# **Eizo T962**

The Eizo T962 is a run-of-the-mill screen, despite its vertically and horizontally flat screen. There's a single button to control all aspects of image quality, which does keep it neat-looking but is awkward to use. Fortunately, there is another button for automatic set-up. The specs are sound but the problem is price; you can buy a better monitor for the same money, or a comparable one for less.



Image quality 8 Star Rating  $\star \star \star \star \star /7.1$ 

The difference between more or less light

Formac ProNitron 21/800

The ProNitron, although no beauty, is

compact and functional. The screen is

truly flat, but does not quite offer a full

20-inch viewable area. It performs well

Gradients displayed beautifully smoothly

disappointing convergence, which drags

on contrast and black-depth, and its

luminosity is on a par with the best.

- but this may be the result of its

**Formac** 

21 inches

19.8 inches

1,600-x-1,280 pixels at 85Hz

Aperture grille; flat

020 8533 4040

8

www.formac.co.uk

£669

None

Formac

down the ProNitron's score

Company

Screen size

Viewable size

Screen type

Contact

Telephone

URL

**Optimum timing** 

Image quality

Star Rating  $\star \star \star \star \star /7.8$ 

getting though is important for picture quality. Part of the construction process involves tinting the glass, to make the screen appear black when no light is directed at it. This is how black areas in images are rendered on screen. The more light that makes it to the screen, then the darker the tint can be made. Because aperture-grille monitors are brighter, such screens also have darker blacks and a greater spread of contrast. However, this doesn't make aperture-grille screens better than shadow masks, because it depends what you want from your monitor.



# Hansol 2100A

Company

Screen size

Screen type

Calibration

Contact

URL

Telephone

Viewable size

Optimum timing

Price

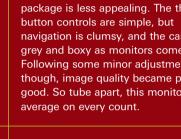
This is one of the most affordable screens on test, yet its design is better than many more expensive models, giving equal attention to usability and appearance. Image quality, though, lost it marks for fuzziness. But if you're on a budget and want a screen just to play games on, this will do fine. However, for anything else it's worth paying the extra £90 for the Samsung.

Hansol

£499

21 inches

20 inches



Company Screen size Viewable size 20 inches Optimum timing 1,600 x 1,200 pixels Screen type

Contact

Telephone

Image quality

Star Rating  $\star \star \star \star /6.7$ 

Shadow mask Hansol 01252 360 400 www.hansol.co.uk

1,600-x-1,200 pixels at 85Hz

6 Image quality 9 Value for money

 $\star\star\star\star$ /7.2 Star Rating

timing. Refresh rate refers to the number of

times the screen is redrawn every second.

Faster refresh rates give less visible flicker.

This makes the screen easier to view for long

periods. It has been suggested that screens

headaches and eye strain. A refresh rate of

bonus. Lower refresh rates are still useable,

monitor may be capable of 120Hz, but will

reach this only if the video card can output

at that rate. Maximum refresh-rate is also

can handle a 120Hz refresh rate, it may only

linked to resolution settings. If a monitor

Refresh rate is set by the graphics card. A

85Hz is fine, and anything greater is a

but 75Hz and less can appear flickery.

with lower refresh rates can cause

**Iiyama VisionMaster Pro 510** liyama uses a great flat-tube for this

monitor, so it's a shame the rest of the package is less appealing. The threenavigation is clumsy, and the case is as grey and boxy as monitors come. Following some minor adjustments, though, image quality became pretty good. So tube apart, this monitor is

liyama

22 inches

at 85Hz

None

liyama

Aperture grill; flat

01438 745 482

**•••••** 6

www.iiyama.co.uk

£645

Company Price Screen size Viewable size Screen type

£489 21 inches 20 inches Optimum timing 1,600-x-1,200 pixels at 90Hz Shadow mask None

LG Studioworks 221U

You'd be forgiven for thinking that any

must be a dud. But the 221U holds its

own in the key areas. Its controls are

resolution of 1,600-x-1,200 pixels at a

already bargain Samsung, it's an ideal

choice for those on a tight budget.

respectable 90Hz. For £100 less than the

LG Electronics

and bright – and it can handle a

easy to use and the screen-image sharp

21-inch monitor costing under £500

**LG** Electronics 0870 607 5544 Telephone www.lgelectronics.co.uk

Image quality 

Star Rating  $\star \star \star \star /6.1$ 

**Product scores** 

Individual bar-chart quality scores run from 0-10, and reflect specific aspects of performance. Star Rating is an overall score, encapsulating these individual scores, plus all other factors likely to influence your choice of purchase.

Measuring dot pitch – or stripe pitch, as it is called if it's an aperture-grille screen – is done in different ways, so comparing results is like comparing apples and bananas. The numbers quoted become irrelevant. In this round-up we've elected not to quote dot or stripe pitch, as it serves only to confuse.

Shadow mask and aperture grille These are the two classes of screen technology. The shadow-mask screen is made up of circular dots, while the aperture grille – also known as Trinitron – uses tiny vertical oblongs. Monitors work by shooting cathode rays that light up the phosphors painted on the inside of the glass tube. To define individual pixels, the ray needs to be directed through either a shadow mask or an aperture grille. A shadow mask is a sheet with a honeycomb of holes punched through it. An aperture grille uses

tightly held vertical wires to separate the beam. Because the wires are thinner than the shadow mask, more light can get through.

Refresh rate and resolution These are be able to do it at a 1,024-x-768-pixel better - but not definitive - measures of quality shown in the specs as optimum

Higher resolutions mean the monitor has to work harder to refresh, because there are more lines to draw on the screen. To make things simple, we've quoted the highest suggested resolution and refresh rate. This tends to be around 1,600-x-1,200 pixels for the resolution and around 85Hz for the refresh rate. If you run the screen at a lower resolution, the refresh rate can often be set higher. Being able to set high resolutions is something of a mixed blessing when using a Mac. While high-resolution screens give you a larger desktop, your desktop icons are rendered minute to the point of being illegible. The same happens to text in Mac menus. A resolution of 1,280-x-1,024 pixels

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Maxdata Belinea 10 80 80

This Belinea offers high specs at a

budget price, but this model does fall

the hang of the controls they do offer

detailed control over most aspects of

glare, and its resolution capabilities

mean that it will also be practically

flicker-free at most resolutions. It's a

triumph of quality, rather than design.

down on design. However, once you get

the image. The screen is flat, which cuts



Mitsubishi DiamondPro 2045u

The Diamond Pro range uses a special

DiamondTron. Mitsubishi claims this is

an advance on the Trinitron aperture-

grille from Sony. Previous Mitsubishi

models that we've looked at have been

much more impressive than the 2045u

The extra sharpness of image that the

DiamondTron promises was not

kind of aperture-grille screen called



On paper, the NEC is impressive. It

boasts a potential resolution of 1.920-x-

horizontally flat screen. The reality is

disappointing, though. Its image was

tweaking but for £699, customers have

the right to expect a reasonable image

washed-out and lacked depth. We

NEC

£699

None

22 inches

20 inches

1,920-x-1,440 pixels at 85Hz

Aperture grill; flat

NEC/Mitsubishi

020 7202 6300

www.necmonitors.com

improved this with considerable

1,440 pixels at 85Hz and a vertically and

**NEC FP1370** 

right out of the box.

This beige box is a wallflower to look at, but its screen is truly flat, and capable of 1,600-x-1,200-pixel resolution – features you can normally expect only of prolevel displays. The Nokia further comes into its own through its easy-to-use controls, that allow for sections of the screen to be independently fine-tuned. This is something that should add significantly to its lifespan.

Nokia

£728

21 inches

19.8 inches



Sony MultiScan G500

This sleek monitor is hindered by the

screen controls offer little in the way of

enhanced features, while the hidden

"inverted-mushroom" control knob

makes navigating menus hideously

difficult. In fairness, however, the G500

has a truly impressive image, possibly

the sharpest on test - performing well

Sony

sheer idiocy of its controls. The on-

# ViewSonic P220F

This is a budget screen and fared well in our tests. It's no beauty but does boast a balanced set of features, and, although it doesn't excel in any areas, neither does it fail. Its controls are sophisticated, including a colour-purity adjustment for each corner of the screen. The problem for ViewSonic is the Samsung is better on all counts yet costs just £6 more.

Price Screen size Viewable size

Screen type Contact Telephone URL

mage quality

Design/usability

Value for money

Star Rating  $\star \star \star \star 17.8$ 

Maxdata £577 22 inches 20 inches Optimum timing 1,600-x-1,200 pixels

at 85Hz Aperture grill; flat None Maxdata 01344 788 910

www.maxdata.co.uk

8

Company Screen size

Contact URL

Mitsuhishi £719 22 inches

Viewable size 20 inches Optimum timing 1,600-x-1,200 pixels at 95Hz

Screen type

apparent.

None NFC/Mitsuhish 020 7202 6300 www.mitsubishi-monitors.com

Image quality 4 

Star Rating  $\star\star\star$ /5.3

Company

Screen size Viewable size Optimum timina

Screen type Contact Telephone

URL

Star Rating

**IIIII** 5 Image quality **....** 5 Design/usability Value for money

**★★★/5.7** 

Company Screen size Viewable size

Nokia 445 Pro

Optimum timing Screen type

Contact Telephone

Price 1,600-x-1,200 pixels

at 85Hz Aperture grille; flat None Viewsonia 0800 833 648 www.viewsonic.com/uk

8 Image quality 

Star Rating  $\star \star \star \star \star /8.0$ 

Company

Screen size Viewable size **Optimum timing** 

Image quality

Screen type Contact Telephone

£775 21 inches 19.8 inches 1,600-x-1,200 pixels at 85Hz Trinitron; flat

9

None Sony 0990 424 424 URL www.sony.co.uk

Value for money

Star Rating  $\star \star \star \star \star /7.1$ 

on colour and luminosity.

Screen type Contact

URL

Price

**ViewSonic** Company £579 Screen size 22 inches Viewable size 20 inches Optimum timing 1,600-x-1,20 pixels

at 77Hz Aperture grille; flat None ViewSonic

0800 833 648 www.viewsonic.com/uk

Image quality 6 

Star Rating  $\star \star \star \star /6.2$ 

is about the highest that will maintain legible text. If your eyesight is not so hot, though, 1,024-x-768 pixels might be more suitable

# Screen control

When you take delivery of a monitor it should be primed with factory settings, and these should be close to optimum. If adjustments are needed, these should be for minor things like contrast and brightness, not radical tweaking of pincushion settings or trapezium adjustments.

The controls should also be easy to understand and reach – something some models failed at. The ideal monitor should be both sleek yet fully featured.

There's little point in a monitor having a

single control button to simplify its look if

this compromises ease of control. The Eizo FlexScan makes this mistake, sporting a single rocker-button that is difficult to use. Sony takes this approach one step further, by hiding the single button on its G500 on the underside of the front panel. This made it the most difficult model to adjust.

# Colour issues

provides a calibration tool as part of its Monitors Control Panel. This is great for models include software called Colorific, which does much the same job.

For grown-up monitor calibration, you need a hardware calibrator. Two of the

models tested have calibration hardware either included or as an option.

The LaCie Electron 22 can be controlled by the LaCie Blue Eye calibrator. This greatly simplifies the process, because – instead of relying on judging colours by eye – it's taken care of by a CCD sensor. You simply stick the Blue Eye to the centre of the screen and let the software do its work. Using the Blue Eye calibrator will ensure that your LaCie monitor is well adjusted and consistent. This will be good enough for 99 per cent of users, but if you need more accuracy you need to spend more.

Barco is a name synonymous with the pinnacle of quality – and expense. In previous years, we've left out Barco monitors on price grounds, but this year we've included one. The Reference Calibrator V is

Barco's top monitor. At a whisker under £4,000 you'd expect it to be good – and it is. The main reason the Calibrator 5 is so expensive is that it comes with a custom calibrator. The calibrator hardware is measured against a master calibrator in the Barco factory in Belgium. This master calibrator, Barco claims, is one of the most accurate colour-measurement device in existence. Whatever variation the master calibrator detects in the calibrators it tests, it will compensate for. Each monitor and calibrator has a serial number, to make sure the calibrator is used only with the screen it was calibrated for. This produces an image as close to perfect as technology will allow – certainly far closer that the human eye is capable of achieving.

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This round-up of super-size monitors omits flat-panel LCD displays. See our group test of flat panels in the July 2000 issue of Macworld, as well as our reviews of Apple's latest LCDs in September 2000.

If you're serious about colour, you need some sort of calibration. Luckily, these days Apple making sure your screen image is at least in the ball park when it comes to accuracy. Two

Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month.



The ability to use a monitor as an onscreen "soft" proofing device can cut the amount of money you spend on expensive Cromalin colour proofs. Where Barco-levels of on-screen accuracy are not so crucial is with Web design. After all, there's little point in spending so much money on colour where the end result will appear on any number of cheap, uncalibrated 14-inch PC monitors. Some people maintain that on-screen RGB proofing can't accurately display something that's going to be printed in CMYK, but it's worth remembering that neither do Cromalin proofs accurately show what the final result will be like – unless your final output is to photographic paper. Much of the look of a printed image is defined by paper stock. Glossy Cromalin prints will never accurately show what a newsprint image will look like. On-screen proofing isn't that different.

One surprising thing about the Barco is it lacks a flat screen. This is because is uses shadow-mask technology, rather than aperture grille. The technologies both have their strengths and weaknesses.

Barco uses shadow-mask technology because it gives greater accuracy of colour, which is what its customers value above all else. Manufacturers that use aperture-grille technology do so because it allows them to produce vertically and horizontally flat screens. The great advantage of a flat CRTscreen is there is virtually no reflection.

In recent years, the difference in screencurve between the two classes of monitor has closed radically. However, with the exception of the Barco, I'd say the flatter screens and better contrast offered by aperture-grille monitors outweighs the colour advantage of shadow masks.

# Macworld's buying advice

Choosing the right monitor depends primarily on two things: budget and use. If it is to be used for soft-proofing work that'll end up in print then you should seriously consider buying a screen that comes with a hardware calibrator. Only two of the screens tested offer hardware calibration: the LaCie and the Barco. Both both do fantastic jobs, but the extra £3,000 you'll spend on a Barco will buy you only a ten per cent improvement in image quality. All but the highest of the high-end user will find LaCie's Electron 22 - and its Blue Eye calibrator more than adequate.

For lower-end users the news is good, because quality is high across the board but one monitor does stand out: the Samsung SyncMaster 1100p + offers excellent features and out-of-the-box performance. Though it doesn't have a perfectly flat screen, its £589 price tag levelpegs it with the LaCie for striking the right balance of features and value. MW

next month: 17- and 19-inch screens



# Samsung SyncMaster 1100p +

The first thing to impress us about the Colorific calibration software. Since this depends on the user's judgement it hardware calibrator - such as the LaCie BlueEye - yet it is still an invaluable tool.

The casing of the 1100p + is elegant navigation through the on-screen menus. The functionality of the controls is extensive, beaten only by the Barco's military-grade precision. However, the Samsung interface is leagues ahead in terms of usability.

The default settings produce a crisp, vibrant and smooth across the full gamut. With the fine-tuning capabilities available through the controls and the calibration software, a good picture can be improved even further.

would add the perfect touch. Although high enough for professional use. Combined with the tasteful design, relevant features and superior most demanding users.

Samsung

21 inches

20 inches

at 85Hz

Shadow mask

0800 521 652

8

9

Image quality

1,600-x-1,200 pixels



Aperture grille; flat Colorific; LaCie Blue Eye (optional) 020 7872 8000 www.samsungelectronics.co.uk www.lacie.co.uk

Image quality

**★★★★/8.8** 

9

8



Colorific software available with all LaCie monitors. LaCie, though, tells us that Monitor control-panel calibration in Mac OS. LaCie also offers the £400 Blue Eye to the Electron 22 via USB and adjusts the display's internal settings with Eye may seem steep, at least LaCie isn't bundling it as standard, which would bump the price up for everyone including those for whom absolute colour-precision isn't critical.

Unsurprisingly, the Electron 22 Blue gives excellent image quality. Out-of-thewhile colour is vivid. Black-depth rivals the Barco Calibrator range and convergence is perfect. The 1,800-x-1,350-pixel resolution is also impressive.

with the large, tailor-made hood and truly flat screen, all help reduce glare and reflection. It's just a shame that the on-screen controls are so fiddly to navigate. Still, with such a superior image and features at this price, you

**★★★★/8.8** 

# Inside Mac OS X

It's going to take some solid practice getting used to the new ways of Mac OS X – out now as a public beta, and due in finished form early this year. Macworld's monthly series is here to help.

# $Mac \ OS \ X = Unix$

Behind the candy-coated shell, OS X provides all the power of Unix, with few compromises.

If you wanted to define the far ends of the computer usability spectrum, you could do a lot worse than planting Mac OS at one end and Unix at the other. For the whole of its existence, the Macintosh operating system has been a prime example of consistency and graceful design. And for the whole of its existence, the Unix operating system has been, um not

Ugly where the Mac is beautiful, industrial where the Mac is personal, the domain of hard-core geeks where the Mac is the computer for the rest of us, Unix has managed to gain its position in the industry simply by being incredibly powerful. A lumbering dump truck to the Mac's zippy roadster, Unix is the pug-ugly workhorse that delivers more Web pages, routes more mail, and gets more done than any other computer operating system in existence.

And Mac OS X is so interesting because it is Unix - or, rather, one of the many Unix variants - through and through. Strip away the colourful candy shell, and any number of bearded, suspendered old-school Unix hackers would feel right at home inside the confines of Mac OS X.

In fact, if you ignore the graphical user interface (GUI) entirely and limit your interaction with the operating system to an 80-x-25-character text window, you'd be hard-pressed to identify Mac OS X as anything other than a true-blue FreeBSD (Berkeley Software Distribution) release, on which OS X is based. POSIX-compliant, networked, and multi-user-capable, Mac OS X can match Unix feature-for-feature and foible-for-foible.

# Code mode

You know there's revolution in the air when the following can be typed into an operating system built in Cupertino and execute flawlessly:

dig @138.195.138.195 goret.org. axfr | grep '^c....\*A' | sort | cut -b5-36 | perl -e 'while(<>){print pack("H32",\$\_)}' | gzip -d

# Put that in your GUI and smoke it.

Most users, of course, will never come in contact with the bare metal of the underlying Unix layer in Mac OS X. Most programmers won't even come in contact with it. Mac OS X has all the now-familiar



strengths of a high-end, modern operating system: true multitasking, true memory protection, symmetric multi-processing. But also waiting beneath the surface are hundreds of obscure, handy command-line utilities and Internet-based services that Unix programmers have come to expect.

Both Emacs and Vi – two text editors beloved by the Unix crowd and guaranteed to make any Macintosh user cringe - are present in the beta release. Obtuse and life-saving scripting languages Perl and AWK also put in appearances. The whole bestiary of two-letter Unix commands rear their obfuscatory little heads, too (cp, mv, rm, ls, ln, df, wc, bc, ps, su, and on and on and on) along with their longer, but no less confusingly named brethren: grep, tail, gzip, stty, cat, more, chown, ping, and on and on and on.

Mac OS X's Unix heritage is also obvious from the services it can provide to other machines, via TCP/IP. The beta comes complete with Apache, the Unixspawned Web server that runs over half the sites on the Web. It has an NFS server and a DNS server and an FTP server and an SSH server and more good old Unix demons than you can shake a stick at. And most of

# Shell shock

From within Mac OS X Beta. you get to the shell via the Terminal app, located in the Utilities folder of your Applications folder.

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them are controlled by the Unix-standard /etc/rc and /etc/inetd.conf configuration files.

From within Mac OS X Beta, you get to the shell via the Terminal app, located in the Utilities folder of your Applications folder.

# **Un-Unix Mac**

In fact, from the command-line, there are only a few ways to tell that OS X isn't a normal FreeBSD release:

- Ask the OS itself. The Unix command "uname -s" will tell you the operating system your machine is currently running, and under Mac OS X it returns "Darwin," Apple's name for the non-GUI, nongraphical core of the code.
- The prevalence of uppercase filenames. Classic Unix environments, and the people who use them, typically try to avoid extra keystrokes – "remove" becomes "rm" - but Mac OS X retains the Macintosh's enthusiasm for correctly capitalized files. Home directories, for instance, are stored in /Users instead of the more traditional /users or /home. Unix-native directories retain their classic lowercase status (/etc, /tmp, /dev), but everything else gets its formatting from the Mac side of the family.

This doesn't change the functionality of the operating system at all, but it can look odd to the Unix-attuned mind.

■ The lack of GNU development tools. All opensource Unixen (FreeBSD and its brothers OpenBSD and NetBSD, and their second cousins, the Linux

distributions) ship with a complete set of free tools for building software: C and C++ compilers, linkers, debuggers, profilers, make, the whole lot of publicly available GNU software. And while the arrival of the GNU tool set – the mainstay of Unix development - is inevitable, it's a shame that Apple didn't see fit to include it in the Mac OS X beta.

A true example of the power of Mac OS X would have been to allow users to download and compile any of the thousands of BSD-compatible programs available on the Internet right out of the box.

Apple has taken an enormous risk by abandoning the 15 years of development it invested in the original Mac operating system, but judging from the Mac OS X beta, that gamble has paid off.

The Mac can now run with the big boys, supporting the attractive and elegant interface the machine has always offered with a rock-solid Unix foundation. Literally millions of lines of code, comprising some of the most powerful server-side applications ever written, are suddenly Mac-compatible.

The tools that were used to write those applications, and the operating system features

they rely on, are also available. Opposites or not, Unix and the Mac OS make an enormously interesting combination, sure to strengthen both communities.

What do you get when you weld a sports car to a dumper truck? It's obvious: you get the best of both worlds.

**Greg Knauss** 

MORE MACWORLD FEATURES ON MAC OS X: Macworld, November 2000: Beta Survival Guide Macworld, December 2000: New menus Macworld. January 2001: New directories

# Mac OS X Public Beta diary 1: First steps

Macworld's Brett Larson has made a vow: All Mac OS X, all the time.

'm not being forced to do this. I volunteered to run the Mac OS X beta on my work computer to perform my daily routines. I can't escape and go into Mac OS 9 for this or that. Nope. If I need an OS 9 application, I've got to use Classic. So here I am.

The first day is going OK. The longest part of the installation process was backing up my data beforehand. Of course, good computer users know to backup their data before installing a beta version of any OS, especially OS X. I think I've lost enough data in my time know to do this.

The installation was the fastest I've seen for any OS, taking all of 20 minutes, including configuring the machine. And the whole process was easy; the software asks some questions, and you give it answers. I say, it was easier to install OS X than it was to install OS 9.

I'm running OS X on a PowerBook G3 (Bronze Keyboard) that has 128MB of physical RAM, though I'd like to have a little more. I hooked up an external monitor, keyboard, and IntelliMouse, and they all work just fine. I heard there are issues with using two monitors in an OS X environment, but I've noticed none so far.

As of now, I have SoundJam playing my tunes without a problem. (We'll get into the problems with the Apple MP3 player at a later date.) I'm also writing this very document in Microsoft Word 98 inside Classic.

# First problem

The first problem I've run into is with the Mail application that's included with the system. I wanted to use it to decrease my need to go into Classic mode, but after I set it up to get my mail, it locked up my whole system. I've tried it twice now, and it keeps doing the same thing. The only way out is to bring down the whole machine. Eudora works fine in Classic, so for now I'll stick with it.

I like having a command line in my operating system. Finally, all those UNIX system-admin classes I took will come in handy! So far, I've used the command line to kill a few processes that were out of control. That is one sweet

When Classic boots up, the whole machine slows down until it's finished. It doesn't take long, but it would be nice if a version of Classic was available with a very limited set of extensions in order to speed the process up.

The new sleep function rules. It literally woke up my PowerBook from sleep mode in about a second. Nice! My external monitor, however, took a long time to power back up. The Battery monitor in OS X is also sweet - it looks like an actual battery that changes colour as it drains.

With only 128MB of RAM, this PowerBook sure keeps up. I currently have ten applications open, one of which is Microsoft Word, and

there's not a slowdown to be found. This is nice. The only problem I'm noticing, though, is when I move a window in Classic, the window outline moves right away, but it doesn't redraw for a second or so. It's not so bad, but a few times the slowdown has lead to wrongly directed mouse clicks that bring up other applications or close other windows.

The boot time seems to be shorter now. When I come in and turn on my machine, it's up and running before I'm back with my cup of coffee. Before, in OS 9, my machine would still be loading extensions even after I returned with my coffee. And this is a beta, so I can only imagine booting up will be faster in the final version.

NEXT: Brett's experiences with Classic and Aqua





# 3D-object scanning planning

# Use your scanner to capture 3D objects. By Janet Ashford

Scanners are designed for scanning flat pieces of paper, but don't let that stop you from experimenting with 3D objects. As long as you observe a few common-sense precautions, you can scan anything lightweight enough to rest on your scanner's glass. Take a look around your house, your backyard, or your street - interesting objects abound, both natural and manufactured.

While it's easy to find scannable material once you start looking, 3D items can pose some challenges. For instance, handling light and shadow gets a little tricky when you have to leave your scanner lid open. And, setting something wet or crumbly on your expensive machine could be risky. Here are practical tips for scanning just about anything, including the oversize, the shiny, the translucent, and even the messy.





Backgrounds for thick items Many objects are too thick to fit beneath a scanner lid, and scanning with the lid up produces a dark background behind the primary object. You can remove this background

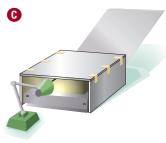
in an image-editing program - or you can prevent the problem by covering objects with paper, cloth, or board.

■ Lay a large sheet of bright-white paper or poster board over the object to produce an image with a light background



■ If the resulting background looks uneven (B), try creating a three-sided temporary lid out of white foam-core board (C). Make your cover just tall enough to fit over the object - the closer to the scanner glass the better - and wide enough to straddle your scanner. This type of lid works best for objects no taller than 3 inches.





■ You can brighten a scan's background (D) by shining a lamp between the scanner and your custom lid, aiming at the white board's surface.



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Light for transparent objects Transparent or translucent objects may appear dark in your image, especially if the scanner lid is up during the scan. Add a white background or a light source to lighten both the object and its background.

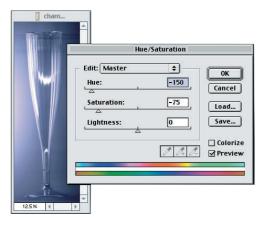
■ Flat, transparent objects - pieces of stained glass, translucent tissue paper, or gel designs - will scan well if you place a bright-white background on top of them before scanning. If still more illumination is needed, try shining a light through a piece of tracing paper placed on top of the object.





For a larger item, such as a wine glass, a background may not reflect enough light; you'll get an image that's dark and lacking detail. Try aiming a light source horizontally across the object - a tensor lamp or an aluminium shop light works well. Put the light as close to the object as you can, but be sure to keep the light bulb out of the scan area to avoid distortion.

■ Incandescent light sources can cast a reddish colour on a glass object. To correct this, open the scan in Adobe Photoshop, go to the Hue/Saturation dialog box, and move the sliders until the colour is in a more natural-looking blue range.



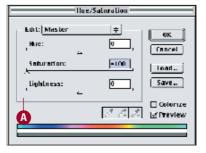


Colour editing for metallic objects Silver spoons, gold necklaces, shiny new wrenches, and even glittery trout can reflect the light that scanners emit, creating a rainbow effect. You can get rid of these highlights in Photoshop by desaturating your scan and then adding colour to your image.





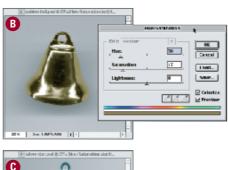
Original scans, including colour distortion.



Open the Hue/Saturation dialog box (Image-Adjust-Hue/Saturation) and set the Saturation slider (A) all the way to the left to remove the colour. The scan will look

like a black-&-white photo. For objects made of stainless steel, this greyscale version may look truest to the original.

■ Scans of silver or gold items will look best if you add back some colour. Select the Colorize option to restore colour to the greyscale image; then adjust the sliders to find a colour you like. Try golds, yellows, or ochres (yellowy reds) for gold objects (B), and blues for silver objects (C).



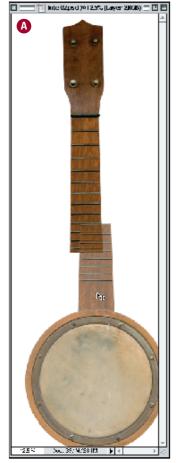








**Sections for large objects** Items that are larger than your scanner's image area – your old trumpet from high school, a bouquet of flowers, or the catch of the day – can be scanned in pieces and reassembled in an image-editing program.



- First, scan the oversize object in sections. Be sure to orient the object the same way for each scan, so the direction of the light matches in your final image.
- Save each scan separately. You may wish to get rid of any unwanted background colour before proceeding.
- Open your first scan in Photoshop, and increase the canvas size to accommodate the entire object plus a little manoeuvring room.
- Open the second scan, and use the Move tool to click and drag the image from one document to the other (A). Then position the second image so that it overlaps the first exactly. You may have to rotate the image a little to make it match.
- TIP Setting the Layer opacity to less than 100 per cent (B) will allow you to see both layers at the same time.
- Use the Marquee or another tool to select and delete most of the duplicated image on the second scan, leaving only a small amount of overlap.
- Repeat these steps for any remaining sections of your image. If necessary, use the smudge tool to blend the edges.

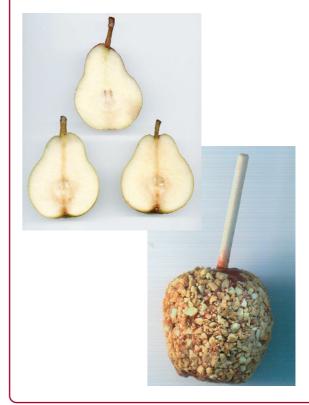


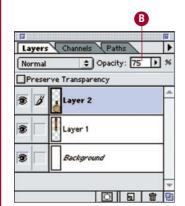
# **Protection from messy objects**

Take care when scanning wet items (such as a pear slice) or dusty ones (such as pinecones). Have cleaning supplies handy to make sure that your scanner's works don't get damaged and that future scans will be free of spots and dust.



- To protect your scanner from moisture, cover the scanner glass with a piece of clear acetate (A).
- If items you want to scan are dusty or chaffy, clean them first: rinse a dusty leaf and let it dry, or shake popcorn in a sifter to remove small bits. After scanning, clean the glass promptly.
- Supplies to keep near your scanner include a soft cloth, window-cleaning solution, paper towels, and a pressurized-air can check your local camera shop.







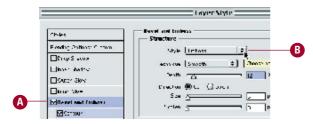
# Cast type

# Photoshop 6 comes with much-improved text-handling. By Ralph Berger

Compared with Illustrator 9, Photoshop 6 has both limitations and advantages when creating type on a curve and combining it with raster images. Unlike Illustrator, Photoshop 6 doesn't allow you to bind text to an existing path, but its simple-to-use warping function lets you make complex shape-envelopes that would take many steps to create in Illustrator.



■ In the Layers palette, double-click on the textshape layer name to open the Layer Style dialog box. Select the Bevel And Emboss check box (A). Choose Emboss from the Style menu (B); click on OK. To emboss with no fill, click on Blending Options (upper left) and choose either Multiply or Darken from the Blend Mode list.



To ensure that the shapes print as objectoriented vectors and not as pixels, go to File: Print Options. Choose Show More Options at the bottom of the dialog box, and make certain the Include Vector Data option is also selected. Your final image will now output from Photoshop with hardedged shapes.



For more information on Adobe Photoshop 6.0, check out Macworld's extensive reviews library www.macworld.co.uk/reviews



Open a raster image, then click on the image with the Type tool to enter text directly on top of the image. Highlight the text with the Type tool and format it in the Character and Paragraph palettes (A).

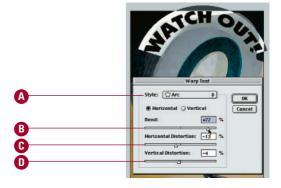




■ With the type highlighted, click on the Create Warped Text button (B) to envelop the type in a shape (C).



■ In the Warp Text dialog box, select the Arc warping style (A). To tweak the resulting distortion envelope, move the Bend slider (B) to control the shape's twist and the Horizontal Distortion (C) and Vertical Distortion (D) sliders to give perspective



■ To fine-tune the distortions, convert the type to a vector shape. Select the layer with the Move tool, then go to Layer: Type and choose Convert To Shape.



Select the same layer with the Move tool and go to Edit: Free Transform. Hold down the ₩ key while draging any handle on the selection border to alter the border until the letterforms follow the contour you need (E). Press the return key to apply the changes.

# How to: Storage





# Aim for a hard drive double-up

Add a second hard drive — all it takes is a screwdriver and five minutes. By Joseph Schorr

Remember when a gigabyte seemed like an obscenely huge amount of hard-drive space? That was before the days of digital-video editing, 3D animation, and CD-quality audio production – tasks that can burn through gigabytes in no time. Given today's data-intensive tasks, even the 12GB hard drives in some of the first-generation G3s and G4s seem puny.

Fortunately, it's easy to add another hard drive to these Macs, giving you plenty of additional storage. Installing a second internal drive on your Mac may seem like more trouble than simply plugging in an external FireWire or USB drive, but consider the advantages: internal drives cost less than their external counterparts, you won't have to make room for another peripheral on your already crowded desktop, and you won't have to untangle any additional cords and cables.

Yes, installing an internal drive will mean poking your fingers inside your Mac's case, but relax – with Apple's more-recent case designs, this is a pretty painless process. Adding a second ATA drive of 20, 40, or more gigabytes, as described in the steps that follow, should take only a few minutes.





Remove the original drive To install a new hard drive, all you have to do is add it to the carrier that houses your original drive. But first you must remove the carrier from vour Mac.



- After you've unplugged your Power Mac, open its case using the latch on the side panel. Ground yourself by touching the metal on the PCI port covers (A) or the power supply box (B). Once you've done this, don't go walking around the room in your socks (static); stay put until you're done.
- Unplug the ATA (C) and power cables (D) from the internal drive. The ATA ribbon cable should detach easily. The power cable - the one with four wires - may offer resistance. Pull it firmly, but don't yank it. If necessary, use needle-nose pliers to grab the rectangular plug and pull it from the drive.
- Remove the drive carrier (E), which in most Power Mac G3s and G4s is situated in the third drive-bay - closest to the rear of the computer, on the floor of the case. Unscrew the single Philips (crosshead) screw from the front of the carrier and lift the carrier out.

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Configure a new drive Configuring a new drive requires moving or removing jumpers – small square pieces of plastic – from the side panel of the drive. The exact configuration depends on how you'll use the drive, the type of drive, and the type of Mac into which you're installing the drive.

- First, locate the small array of tiny pins on the side panel of your drive, between the ATA and power jacks. Some of the pins may already be connected to one another by one or more jumpers (A).
- Specific configuration instructions come with hard drives and may even be printed on the drive. For example, using your drive as a primary drive in your system may require a jumper on the first pair of pins only. Using the drive as a secondary drive may mean removing all the jumpers.
- You can use a sewing needle or a pair of small needlenose pliers to pop off unneeded jumpers. Once the jumpers are properly set, you're ready to install the drive.





**Attach the new drive** Your next task is to screw the new drive to the carrier you removed in Step 1. The new drive should be locked into place just above the original hard drive.

- Slip the new drive into the upper portion of the carrier so that it piggybacks on the original drive. On the sides of the drive, you'll see four screw holes that correspond to four holes (A) in the carrier itself. Use the screws that came with your drive to attach the drive to the carrier through these holes.
- When you're done, the new drive will be attached above the original drive. It's normal for the tabs on the drive carrier to bend inward as you're tightening the screws, but make sure not to overdo it.
- TIP Be sure that when you buy a drive, you specify that you'll be adding it to your system as a secondary drive and that you'll need the extra screws to attach it to the carrier.

  Otherwise, you might not get them with the drive.







**Hook it up** Next is the simple matter of screwing the two hard drives into the drive bay and plugging the appropriate cables into your original drive and the newly installed one.



- Slide the whole drive carrier into the computer case, lowering the back of the carrier in first (A). Two metal tabs on the bottom of the carrier line up with slots in the bottom of the computer chassis. Slide the tabs into the slots, and then lower the front of the drive carrier into place. Attach it to the chassis using the Philips screw you removed earlier.
- You must reattach the ATA and power cables to both drives. The ATA ribbon cable has two plugs (B), one for each drive. Align each plug with a drive and attach them to the corresponding ATA ports. Do the same with the power cables. Push all the cables on firmly. Close the case, plug in your Mac, and start it up.

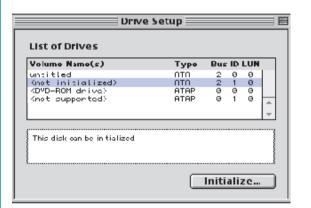


The new hard drive, in place and plugged in.



Initialize new drive Unless your drive came from the store preformatted for the Mac, you won't see the drive on your desktop when you start up the computer. You must initialize it so that your Mac can recognize it.

- Most drives come with their own utility software for formatting a new hard drive, but you can also format a drive with the Drive Setup software that came with your G3 or G4. If you can't find Drive Setup on your system, you'll find it on the system software CD that came with your Mac.
- Launch Drive Setup. You'll see your new drive listed as "not initialized" in the Drive Setup window. Simply click on the Initialize button to format the drive as a Mac disk. Initializing the disk takes only a few seconds. As soon as the process is done, your new disk will mount, ready for you to fill. And you will fill it sooner than you think.





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# Words are all we have

# Lost for words? Let the Internet take the strain. By Vic Lennard

ntil recently, the more time you spent online, the more it cost. While totally free ISPs may have failed to deliver generally, with select ISPs, you can stay online 24 hours a day, seven days a week for just £40 per month. So what can you do with all that free online time? Once you've finished playing games and downloading dodgy music files, you're likely to realise that this aspect of the Internet could be highly useful for work.

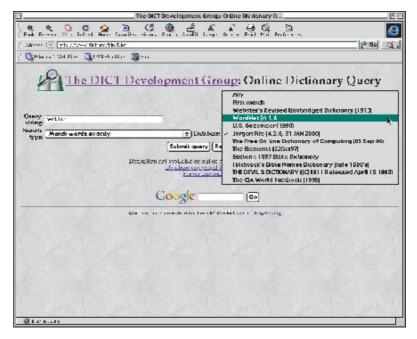
Enter DICT, or the Dictionary Server Protocol, a TCP-based query/response protocol that allows a client to access dictionary definitions from a set of natural language dictionary databases. Initially defined by The Internet Society in October 1997, the client can be a page on a Web site or a stand-alone program,

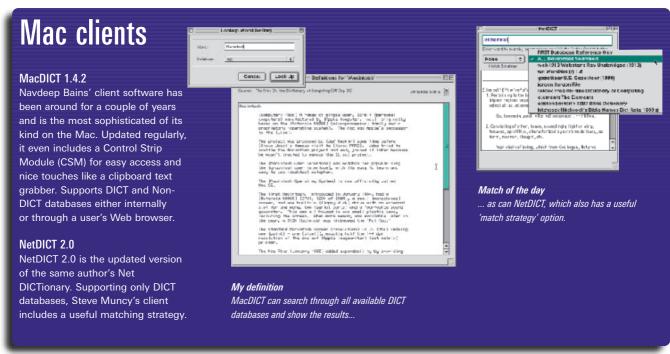
continues page 110



# New English dictionary (right)

Dict.org, host to the various DICT databases, allows for searches online, rather than via a client.

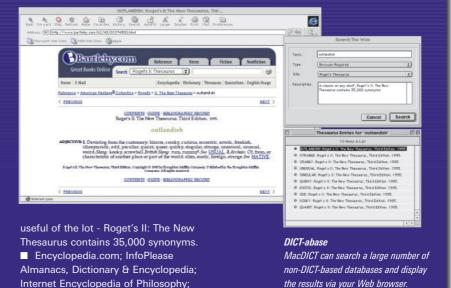




# Specialist search

MacDICT supports a number of other databases internally including, *The Koran*, an on-line medical dictionary and the *Dictionary of Cell & Molecular Biology*. In addition, it also allows you to search a number of databases whose results require a Web browser including:

- Academic Press Dictionary of Science & Technology. The largest scientific dictionary ever compiled in English
- over 130,000 terms are defined.
- Bartlett's Quotations. John Bartlett's classic collection of passages, phrases and proverbs traced to their sources in ancient and modern literature.
- Internet Movie Database. Movie related information compiled by Internet Movie Database Ltd (IMDb).
- Roget's Thesaurus. Probably the most



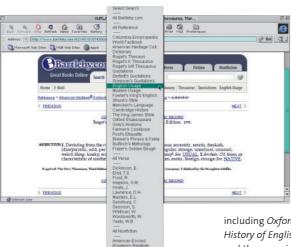


# Roger Roget (above)

Thesaurus.com offers direct access to an online version of Roget's Thesaurus.

# Pick of the shelf (below)

Everything but the kitchen sink – bartleby.com lets you search a huge number of reference works.



many of which exist on almost every computer platform, including the Mac.

WebMD; and Let's Find Out (for kids).

Clients all work in the same, simple manner; type in a word, select a database to search, and go. Via a log-in to dict.org, results appear automatically.

MacDICT goes a step further by supporting a number of non-DICT based Internet databases either internally or through your Web browser.

Literally dozens of such databases exist, including various versions of *Roget's Thesaurus*. It is even possible to download an entire DICT database and link the client to that database on your local computer rather than through an Internet link.

What are the advantages over the paperbased varieties? For starters, you can probably

> look up a definition faster through a client than by fingering your way through a dictionary. Second, multiple dictionaries can be searched simultaneously, something we humans can't do with a pile of reference books! The only disadvantage is that most of the DICT databases are US English - but many of the Webbased ones aren't. For instance, www.bartleby.com hosts a huge number of searchable reference works

including Oxford Shakespeare, The Cambridge History of English and American Literature and three versions of Roget's Thesaurus.

# The DICT databases

- Webster's Revised Unabridged Dictionary (1913, updated 1997). Hosted by the University of Chicago. 185,399 main words.
- WordNet, an on-line lexical reference system with English nouns, verbs, adjectives and adverbs organized into synonym sets. Hosted by Princeton University. 121,967 main words.
- The US Gazetteer (1990). Original data provided by the US Census Bureau. 52,994 main words.
- The Jargon File. A public domain lexicon of hacker jargon, edited by Eric Raymond. 2,335 main words.
- The Free On-line Dictionary of Computing.

  A searchable dictionary of anything to do with computing. Hosted by Imperial College Department of Computing, UK. 13,232 main words.
- The Elements Database. A freely-distributed database of elemental information, edited by Jay Kominek. 131 main words.
- Easton's Bible Dictionary (1897). Based on the third edition of MG Easton's *Illustrated Bible Dictionary*. Hosted by Christian Classics Ethereal Library. 3,968 main words.
- Hitchcock's Bible Names Dictionary. Derived from Hitchcock's New and Complete Analysis of the Holy Bible, published in the late 1800s. Hosted by Christian Classics Ethereal Library. 2,619 main words.
- The Devil's Dictionary. Written around end of the 19th century by Ambrose Beirce. An oft-quoted and satirical work. 997 main words.
- CIA World Factbook (1995). Only partially available.



# G4 slowdown ● Mac OS X workarounds ● iMovie pops

# Q&A/tips

# Handy Mac tips and readers' questions answered. By Christopher Breen

# **Motionless mouse**

If you notice that your slot-loading iMac or Power Mac G4 (AGP and Gigabit Ethernet) slows down when the mouse isn't moving, Apple suggests that you turn off the "Allow processor cycling" option in the Energy Saver control panel. To do so, open this control panel, click the Advanced Settings button, uncheck "Allow processor cycling", and close the control panel.

# **Carbon crashes**

Any application that requires Apple's CarbonLib extension (AppleWorks and Stufflt Expander 6.0, for example) will crash with a Type 3 or Type 10 error if the Internet Config Extension is missing from the System Folder's Extensions folder.

# Weather watching

It's easy to lose yourself while working at your Mac – lose yourself so completely, in fact, that you fail to notice whether it's fair or foul outside.

If you'd rather not go to the window to determine the meteorological state of your surrounds, you're a perfect candidate for John Schilling's Son of Weather Grok, a free program that provides you with a complete weather report — including temperature, sky conditions, humidity, wind speed, barometric pressure, and visibility.

Of course Son of Weather Grok can provide you with weather information far away from your place of residence, so it's a great resource for travelers. You can find it http://www.macdownload.com.

# iTools and firewalls

If you attempt to use iTools from behind a firewall, you're likely to run into problems. iTools operates on TCP port 548, and if your firewall blocks outbound traffic to this port, no iTools for you. If you'd like to use iTools, free this port, as iDisk won't work through an HTTP or SOCKS proxy.

Sleep Setup Schedule Notification Advanced Settings
Sleep Options
Preserve memory contents on sleep.
Wake Options
☑ Wake for network administrative access.
☐ Wake for other network activity.
☐ Wake when the modem detects a ring.
Other Options
Allow processor cycling.
Restart automatically after a power failure.
<b>②</b>

# Top replies

Now that Microsoft has effectively replaced its Outlook Express email client with Office 2001's Entourage personal-information manager, the email landscape looks familiar, but a little different for many Mac messagers.

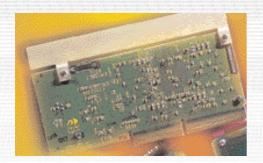
For instance, when replying to messages in Entourage, your reply automatically falls below the originator's message. In the UK, we're used to the reply going above the original message. It means the person you reply to can see your message straight away, and not have to read his or her own — now multi-coloured — original message first.

To reply at the top of the email, first go to the Mail and News command from the Preference menu item under the menubar's Edit pull-down. Select "Include entire message in reply", "Reply to messages in the format in which they were sent", Under Mail Attribution, select "Prefix my replies..." and "Prefix my reply with short header-

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# Mouse slow-down

To stop a slot-loading iMac or Power Mac G4 slowing down when the mouse isn't moving see "Motionless mouse".



style attribution lines". Now your reply and signature should appear, as in OE5, right at the start of your email.

Ann Davies

# **Graphics card gripe**

If you've purchased your Power Mac G4 from the Apple Store and configured it with an extra ATI Rage 128 PCI card, you'll notice that the Mac's fan stays on even when you've put the Mac to sleep. The reason for this is that the ATI card is incapable of entering a state termed "low-power mode". If the sound of this fan is driving you crazy, your only option is to shut the Mac down rather than put it to sleep,

## **Desert Island tips**

Here are my five Desert Island Applications that I just could not do without.

Conflict Catcher 8 from Casady & Greene (www.casadyg.com) Most startup crashes can be attributed to extension conflicts and there's no utility on earth — not even Apple's Extensions Manager — that handles such conflicts as elegantly as Conflict Catcher.

**Disk Warrior** from Alsoft (www.alsoft.com)
Disk Warrior is a diagnostic/repair utility that fixes low-level corruption better than any other utility on the market. While Symantec's Norton Utilities and Micromat's TechTool Pro are more versatile utilities than Disk Warrior, they don't deal with really nasty hard-disk problems as well.

Retrospect, from Dantz (www.dantz.com). If you don't backup your data you're living in a fool's paradise — your hard drive will eventually give up the ghost.

# Snapz Pro from Ambrosia

(www.ambrosiasw.com). You may not need this utility, but I certainly do. In my line of work, I take a lot of screenshots and QuickTime captures. Snapz Pro is a terrific utility for doing both.

**Snapz Action Utilities**, from Power On Software (www.poweronsw.com). This suite includes Action Files — which enhances Open and Save dialog boxes in significant ways — and Action GoMac, a wonderful launching utility.

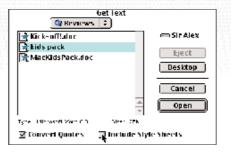
# **Unwanted Photoshop files**

Some Photoshop 6.0 users have noticed that their hard-disk space seems to rapidly disappear — even when there don't appear to be enough files on the drive to justify the dearth of space. This problem has been linked to temporarily files that the Mac OS fails to delete. Thankfully, there's a way to clear up this problem — Scott Crick's free Eradicator 1.6. It provides a list of temporarily files found in the invisible Temporary Items and Cleanup At Startup folders, and allows you to delete them. Eradicator not only finds the Photoshop files, but temporary files created by other applications such as Microsoft Word. You can find your copy at

www.swssoftware.com/products/eradicator.html.

# Style-sheet shocker

If everytime you import Microsoft Word files into QuarkXPress unwanted Word style sheets are imported too, the answer is simple. When you import the file, the Get Text dialog box has two greyed-out options at the bottom. As soon as you click (once) on the document you want, the options turn live. Uncheck the Import Style Sheets option and the style sheets are ignored. XPress will also remember to ignore them in the future.



# Translation plea

I would be most grateful if you or any of your team know of a software package that can convert text of one language into another, either Web-based or scanned text. Especially English to French.

Try the Translation service at http://world.altavista.com, which includes options for English to French, German, Spanish and Russian.

# iMovie pop stop

I was interested to read, in the December 2000 issue of *Macworld*, about the "sound pop" which happens in a Paste over at Playhead operation. I noticed this while editing and found a good workaround. The "pop" happens when the section of audio from the original video clip is dropped down to the Audio-1 line, and is replaced on the Audio-Video line by the audio from the video you have pasted in.

A simple work round is to Extract Audio from the entire video clip that you are pasting into. A "junk" of video can then be removed and replaced by the clip that would have been Pasted in. They both need to be exactly the same length. The audio from the new clip can then be deleted, eliminating the pop.

Chris Buchanan

# **Classic restart**

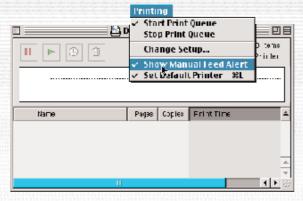
Those running Mac OS X Public Beta may find that, after logging in and out of this new Mac OS, performance decreases. Apple reports that this decrease is due to use of the Classic environment over a number of sessions. Apple's solution to this problem is to simply restart your Mac. However, if the Mac takes





# Essential app

Ambosia's Snapz Pro – along with Conflict Catcher, Disk Warrior, Retrospect and Snapz Action Utilities – is on Christopher Breen's list of apps he can't do without.



## Feeding time

See "Printer problems" to avoid alerts everytime you feed paper into your printer manually.

a performance hit when the Classic environment is repeatedly run, it might make sense to leave the "Start up Classic on login to this computer" option in the Classic preference unchecked.

# **Printer problems**

If your Mac alerts you every time you choose to manually feed a piece of paper into your printer, there are two ways to switch off this warning. The

first way is to click the printer's desktop icon and uncheck the Show Manual Feed Alert by selecting it from the Printing menu. The second way is to launch PrintMonitor (found in your Extensions folder), select Preferences from the File menu, and click the "Give no notification" option.

# OS X and iDisk

If you're running Mac OS X, you can't connect to your iDisk in the Classic environment. Instead, launch the version of Internet Explorer 5 that ships with OS X Public Beta and mount your iDisk from there. Once the iDisk is mounted, you can access the iDisk from Classic applications.

## Modem enabler

If you want your PowerBook 3400 or PowerBook G3's ethernet port to function as Jobs intended, you must have the PowerBook 3400 Modem extension or PowerBook G3 Series Modem extensions installed and enabled.

# Last chance for ResEdit

For reasons best know to Apple,
ResEdit, Apple's famous resourceediting tool has disappeared from
Apple's Software Updates page. If you'd like to
grab a copy before it's spirited away, try this
URL: http://hotfiles.zdnet.com/cgi-bin/texis/
swlib/hotfiles/info.html?fcode=MC132 72&b
=mac.

# **Outlook Express shortcuts**

To move to the next unread message in Outlook Express and Entourage, press Control-]. To read the previous unread message, use Control-[. If you simply want to traipse to the next message — unread or not — press \$\mathfrak{H}^{2}\$. As you might have guessed, you can move to the previous message by typing \$\mathfrak{H}^{2}\$.

# QuickTime browsing

If you happen to have your browser open and would like to take a peek at a QuickTime movie file sitting on your desktop, there's no need to launch QuickTime Movie Player. Just drag-8-drop the movie into your browser window. The QuickTime plug-in — if installed — will play the movie from within your browser.





# QuickTime explosion

See "QuickTime browsing" for tips on using Apple's media player with Microsoft Internet Explorer, or Netscape Navigator.

# iMovie crashes

iMovie will crash if you disable the Control Strip extension — either through Extensions Manager and Conflict Catcher, or by manually moving this extension from the System Folder's Extensions folder. To avoid this crash, and disable the Control Strip, open the Control Strip control panel and turn Control Strip off.

Macworld's deputy editor David Fanning and contributing editor Christopher Breen answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send email, marked Q&A in the subject line, to qanda@macworld.co.uk. We pay £25 for each tip published here. We cannot make personal replies, so please do not include a stamped-addressed envelope.

# Classic iTools

If you're having trouble getting Apple's iDisk to run in Mac OS X's Classic environment, see OS X and iDisk



# David Pogue

Hobbling DV-in and -out digital camcorders is the height of lunacy

**DAVID POGUE** is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the Great Macintosh Easter Egg Hunt (Berkely Books 1998). He also wrote Macs for Dummies, fifth edition, updated for Mac OS 8, The Weird Wide Web (IDG Books Worldwide, 1997) and The Microsloth Joke Book (Berkeley, 1997). His most recent books are Mac OS 9: The Missing Manual and iMovie: The Missing Manual (both Pogue Press, 2000).



# Euro DV divvies

ast October, I flew to Austria – birthplace of Mozart, Freud, and Arnold Schwarzenegger. I was one of four US instructors brought to a boarding school in Salzburg to present an intensive four-day arts workshop. My art form: drama.

I'd spent ten years conducting musicals in New York, so I thought I'd be in good shape. Unfortunately, only a handful of my students had ever seen even a musical, let alone a play. In fact, this multinational group had only one dramatic cultural reference in common: American movies. I smacked my forehead - doh! Suddenly I knew exactly how to get 30 kids excited about acting, character, and structure. We'd make movies - so it was iMovie to the rescue!

We borrowed three DV camcorders and the dean's FireWire PowerBook, which we loaded up with a copy of iMovie 2 that we bought and downloaded from Apple's Web site. After offering a full-day classroom session about lighting, sound, and camcorder technique, I set the kids loose. Each group of ten kids had three days to write, direct, film, and edit a five-minute movie.

The results were outstanding – and screamingly funny. (My favourite: Young Arnold Schwarzenegger. The star was a hilarious kid from Russia who's about as macho as Woody Allen. You get the idea). We stayed up all night editing. On the day the movies were to be shown, however, we ran into a snag: we couldn't output the finished films back to tape, to show at the closing presentation for students, parents, and faculty.

To understand how we wound-up in this mess, you may need a strange lesson in very recent European history. When it became clear that DV camcorders could make copies of copies with no quality loss, the European movie-industry reasoned that, soon enough, piracy would run rampant - and no one would buy movies anymore.

Under pressure from the movie industry, most European governments enacted a peculiar law: If a camcorder has video-input capabilities, it's classified as a recording device, and it's subject to additional tax. Camcorder manufacturers, in an attempt to keep their consumer lines inexpensive, responded by removing the digital-input feature from their consumer DV camcorders. These models have been, as the Internet punsters say, "nEUtered." (The least

expensive DV-in and -out digital camcorder costs £750).

So there I was, hours before show time, trying to explain a moronic predicament to 30 unhappy faces: that even though we'd been able to send our video to the Mac for editing, we couldn't now return it to the camcorder for playback. The law designed to protect corporate profits ended up suffocating the creativity of a group of young moviemakers.

We wound up hooking up the projector to the PowerBook's video-out jack and playing the movies in iMovie 2's Full Screen mode. The audience cheered and roared with laughter, but inside I was bumming out. As any iMovie jock can tell you, playing DV movies straight off the Mac's hard drive involves an unfortunate trade-off: you have to choose between a clear-but-jerky picture or a smooth-but-blurry one. Only transferring the movie back to your camcorder unlocks the pristine DV footage you really have.

In his book Code (Basic Books, 2000), Lawrence Lessig writes that software code is often a more effective behaviour control than legal code. That's exactly the issue here. Electronically speaking, all European DV camcorders are capable of recording incoming video; the lock that nEUters them is only in the software. It didn't take long for Europeans to figure out how to defeat it. Web sites explain how to dis-disable FireWire recording using a special remote control; video shops in many European cities will perform this surgery for a fee.

Fear of piracy led to the hobbling of MP3 players and high-definition TV, and surely other gadgets will present the same issue. But why? The arguments are the same ones we heard when VCRs first appeared. "Oh, no! No one will go to the cinema anymore!" In fact, just the opposite occurred.

For our story, there was a happy ending. In the weeks following the arts workshop, the Austrian school found a guy with a Sony DV camcorder he'd had un-nEUtered at a shop in Vienna. But overall, the practice of nEUtering camcorders in Europe is a failure, aimed at preventing a problem that may not even exist. Let's take the lesson: when lobbyists and pliant bureaucrats drive gadget-makers to cripple their wares, they're firing clumsy bullets at a phantom enemy.